

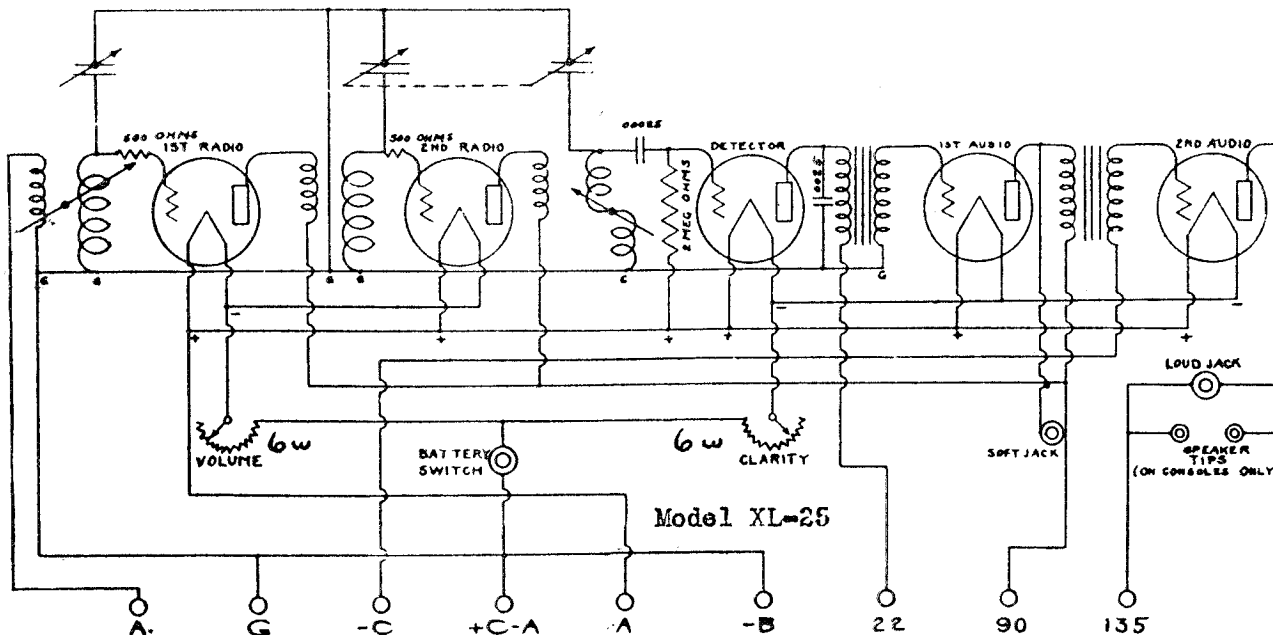
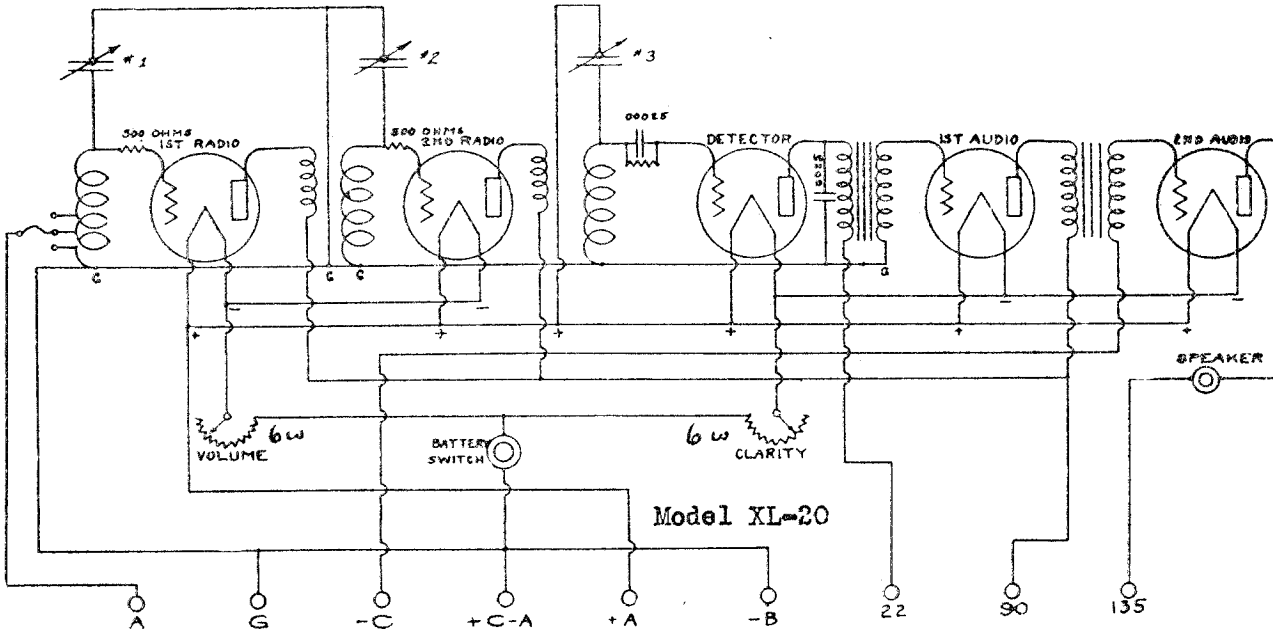
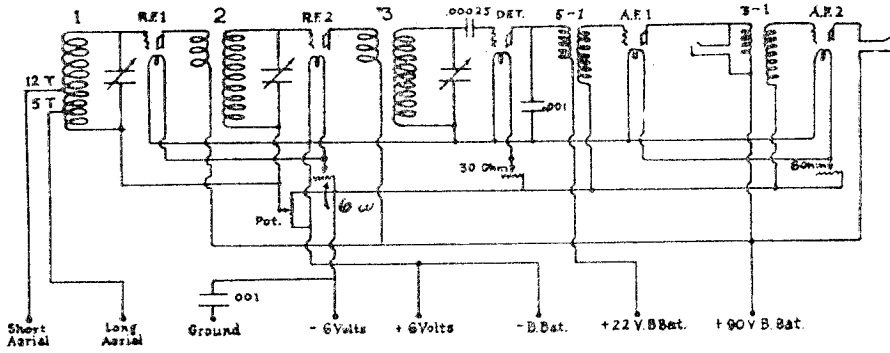
JOHN F. RIDER

Rider's Perpetual Trouble Shooter's Manual

Volume 1

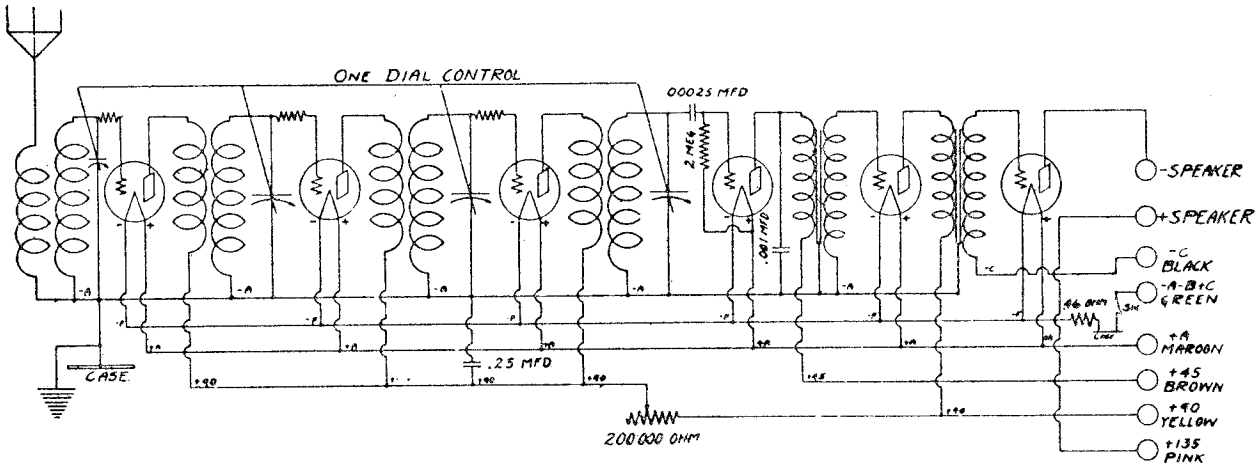
THE A-C DAYTON CO.

MODEL XL-5
XL-20
XL-25

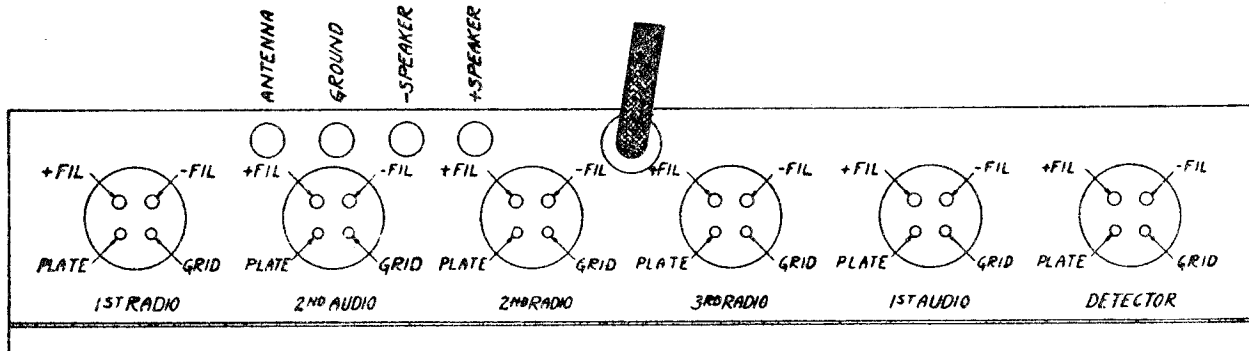


MODEL XL - 50
 XL - 60

THE A-C DAYTON CO.

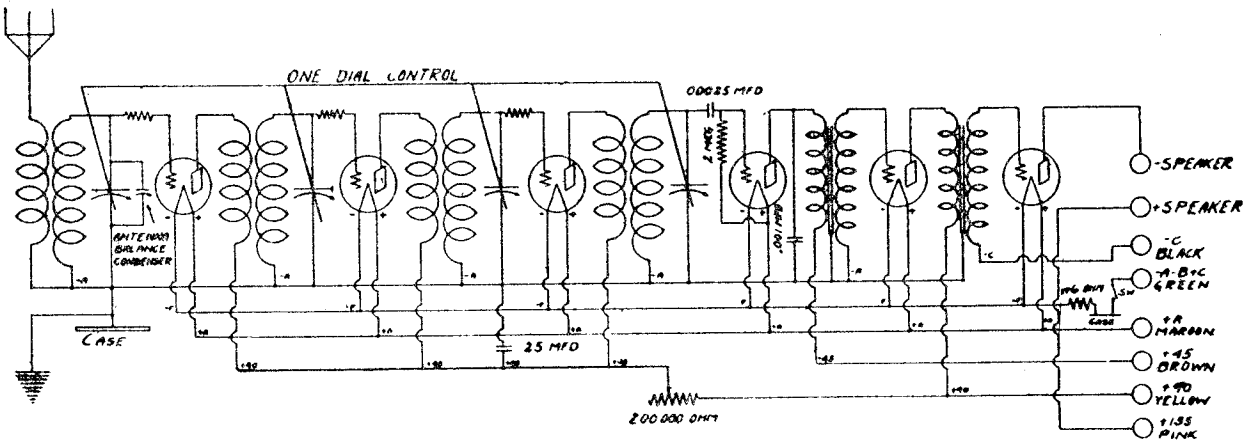


Model XL - 50



FRONT

THE A-C DAYTON CO.

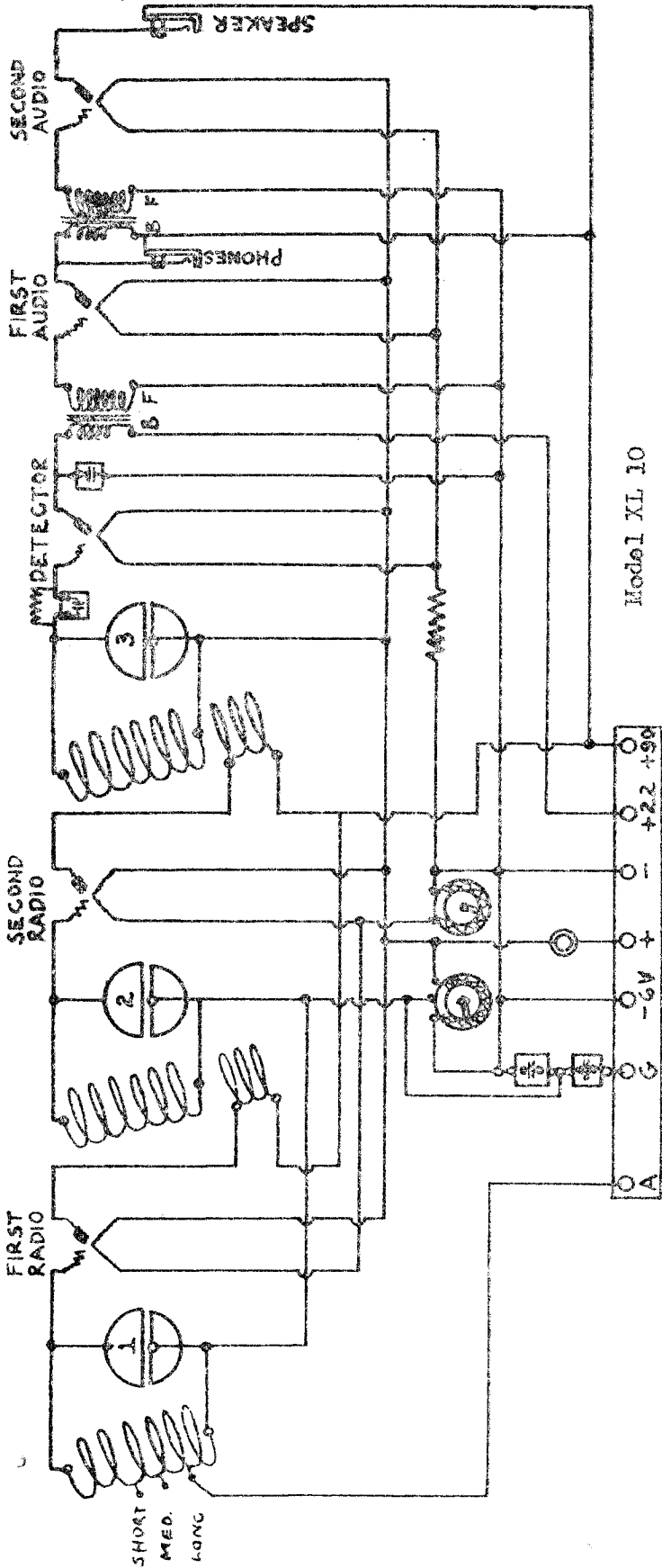


Model XL - 60

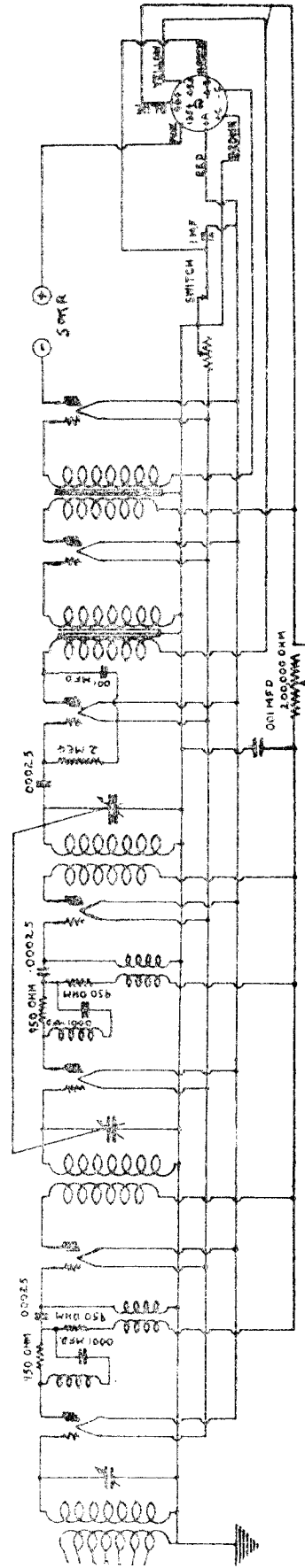
THE A-C DAYTON CO.

MODEL XL - 10

XL - 70



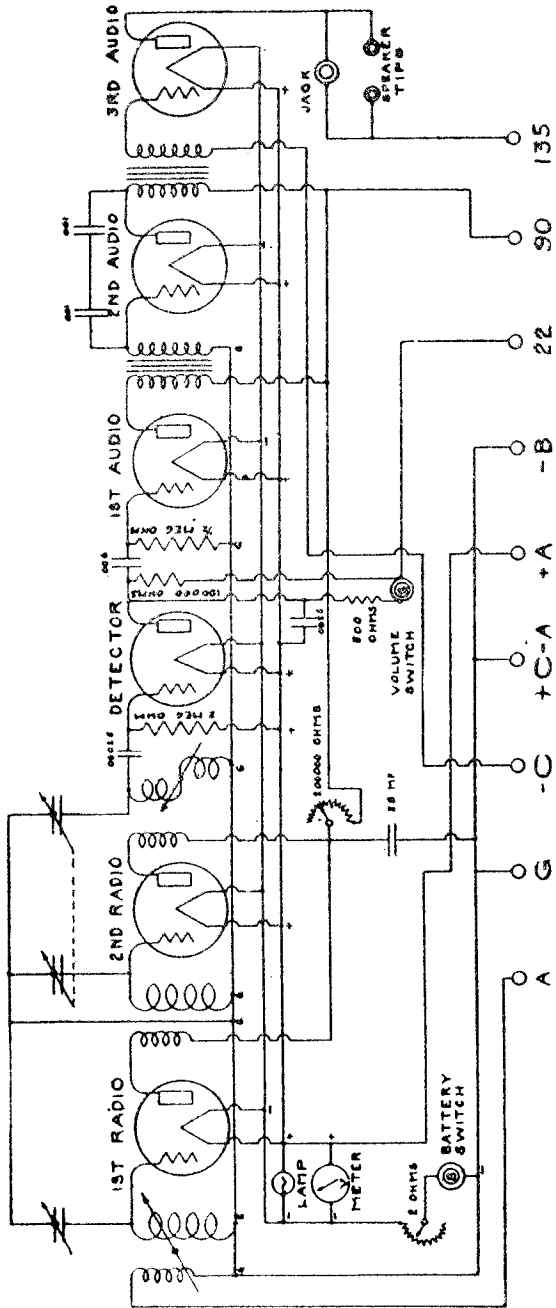
Model XL 10



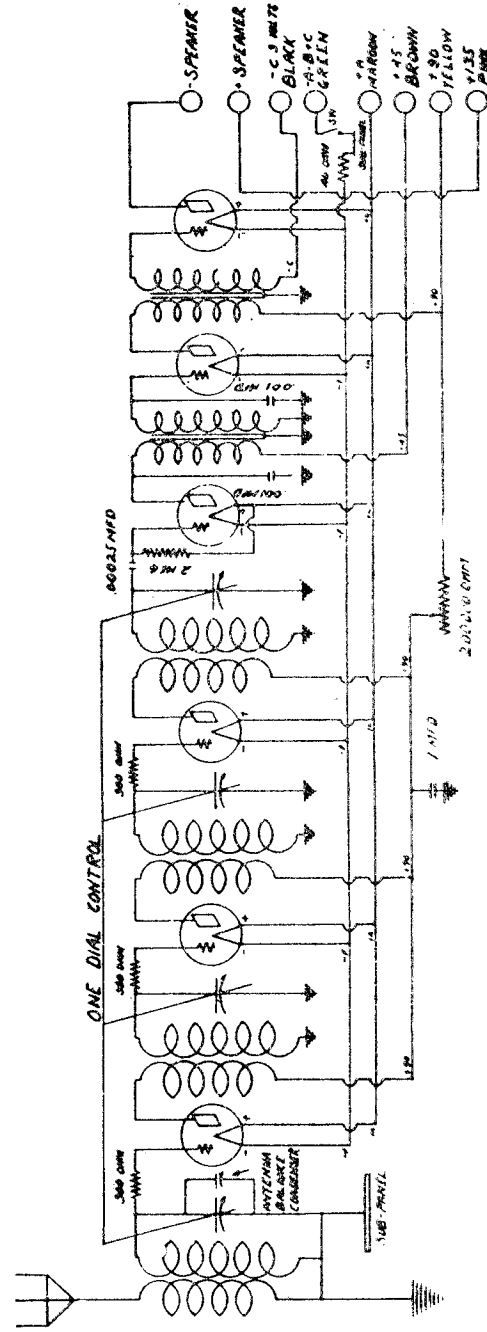
Model XL 70

MODEL XL - 30
XL - 61

THE A-C DAYTON CO



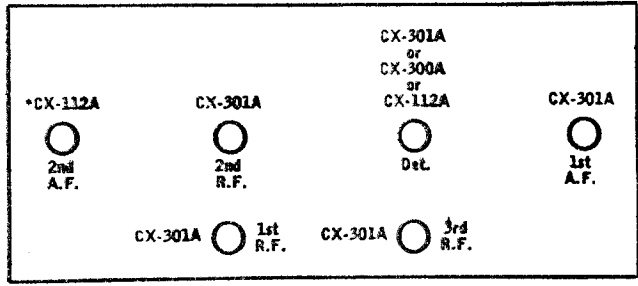
Model XL - 30



Model XL - 61 Battery

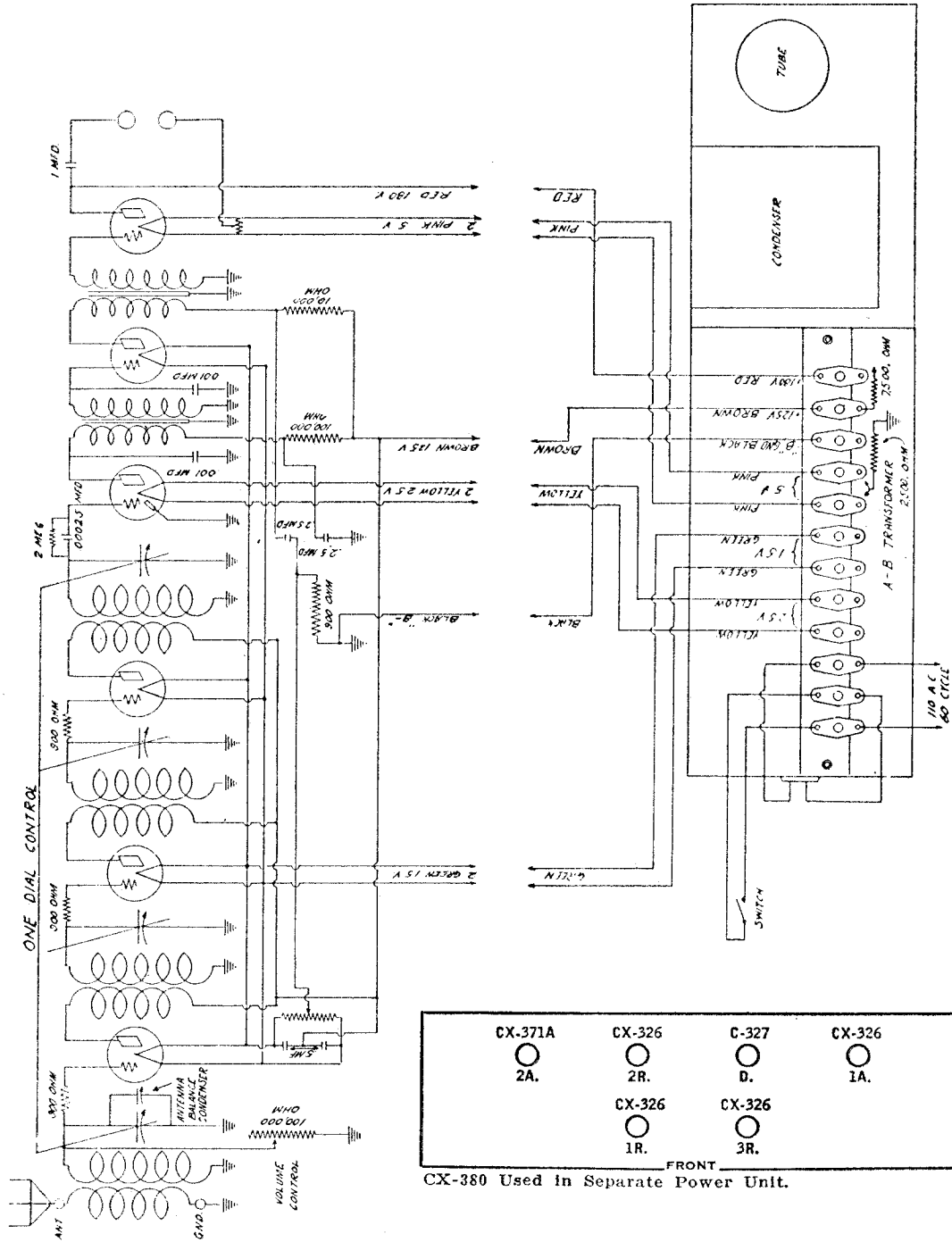
XL 61

(Batt.)



THE A-C DAYTON CO

MODEL AC - 63



CX-380 Used in Separate Power Unit.

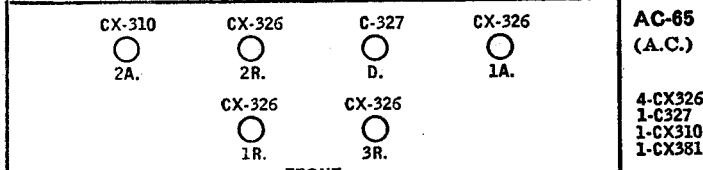
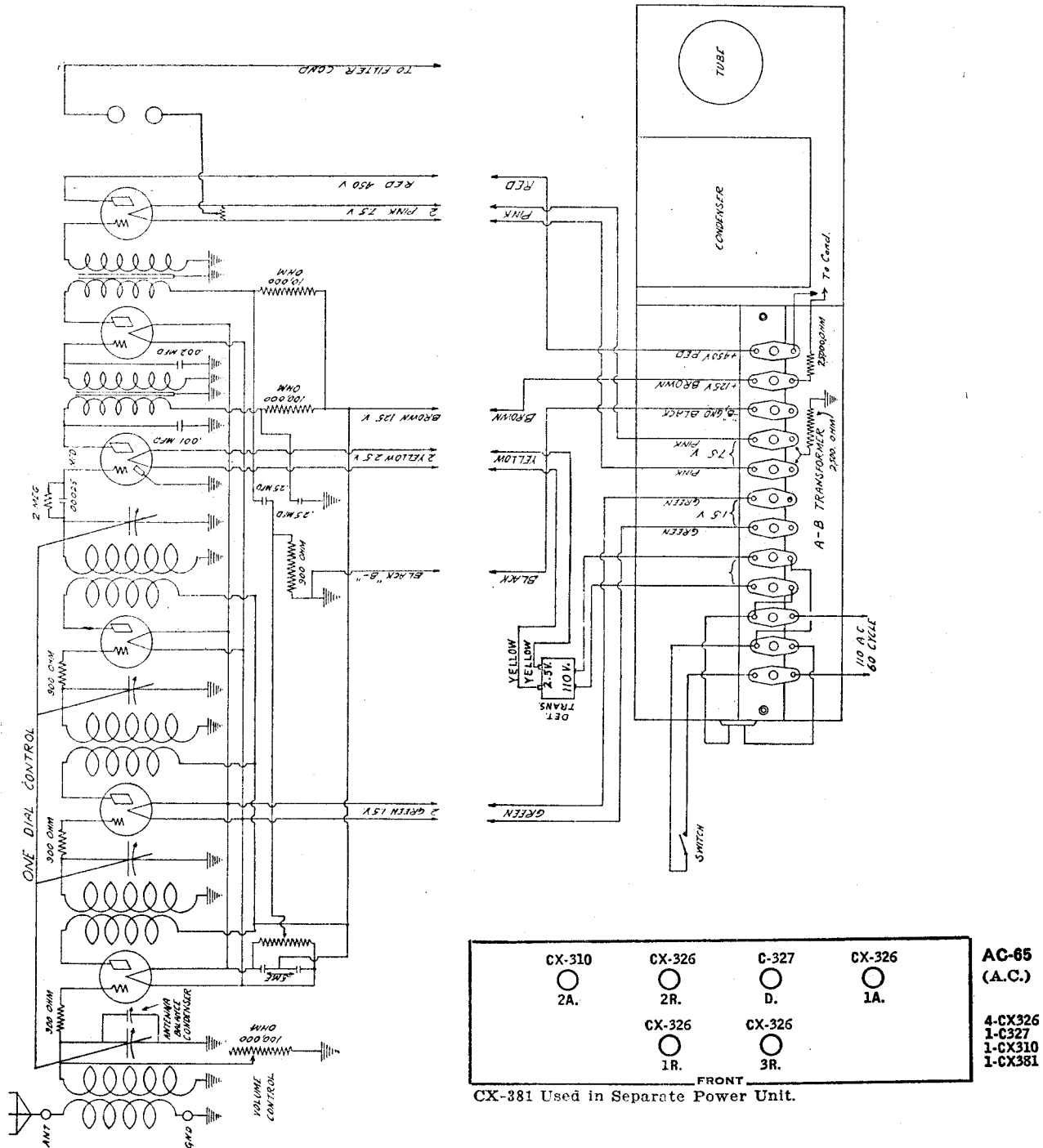
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	150 V.	4 mils	1.5 V.	11 V.
2nd R. F.	150 V.	4 mils	1.5 V.	11 V.
3rd R. F.	150 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.5 mils	2.5 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	160 V.	16 mils	5.00 V.	40 V.

The above readings are taken at 120 Volt line voltage. These readings may vary 5% plus or minus.

MODEL AC - 65

THE A-C DAYTON CO.



CX-381 Used in Separate Power Unit.

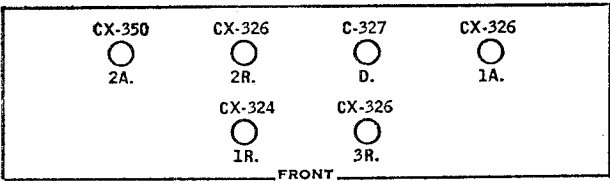
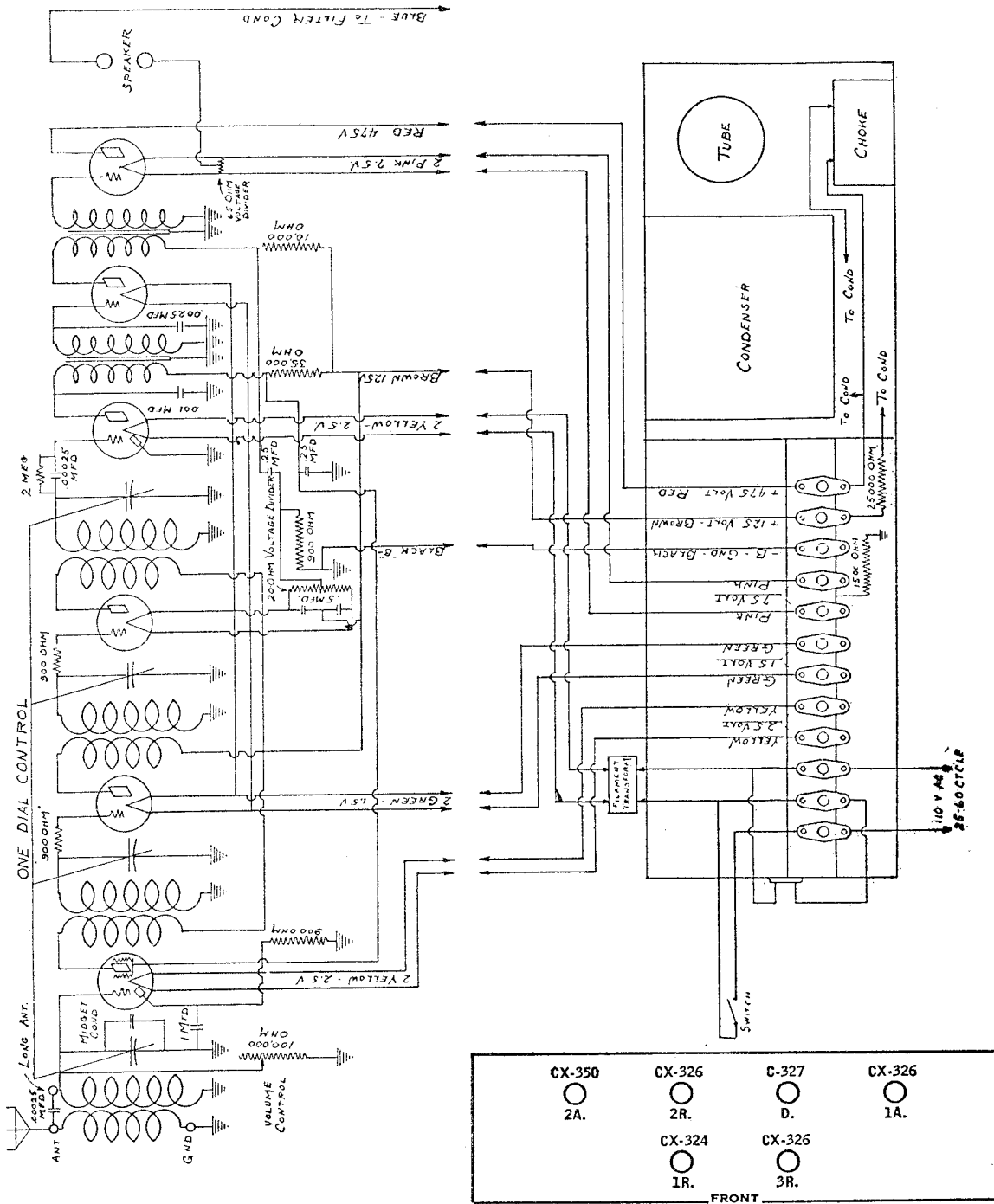
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	145 V.	4 mils	1.5 V.	11 V.
2nd R. F.	145 V.	4 mils	1.5 V.	11 V.
3rd R. F.	145 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.3 mils	2.45 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	430 V.	18 mils	6.75 V.	42 V.

The above readings are taken at 120 Volt line voltage. Readings may vary 5% plus or minus.

AC-65 (A.C.)
4-CX326
1-C327
1-CX310
1-CX381

THE A-C DAYTON CO.



AC-66
(A.C.)
1-C324
3-CX326
1-C327
1-CX350
1-CX381

VOLTAGES AT THE VARIOUS SOCKETS

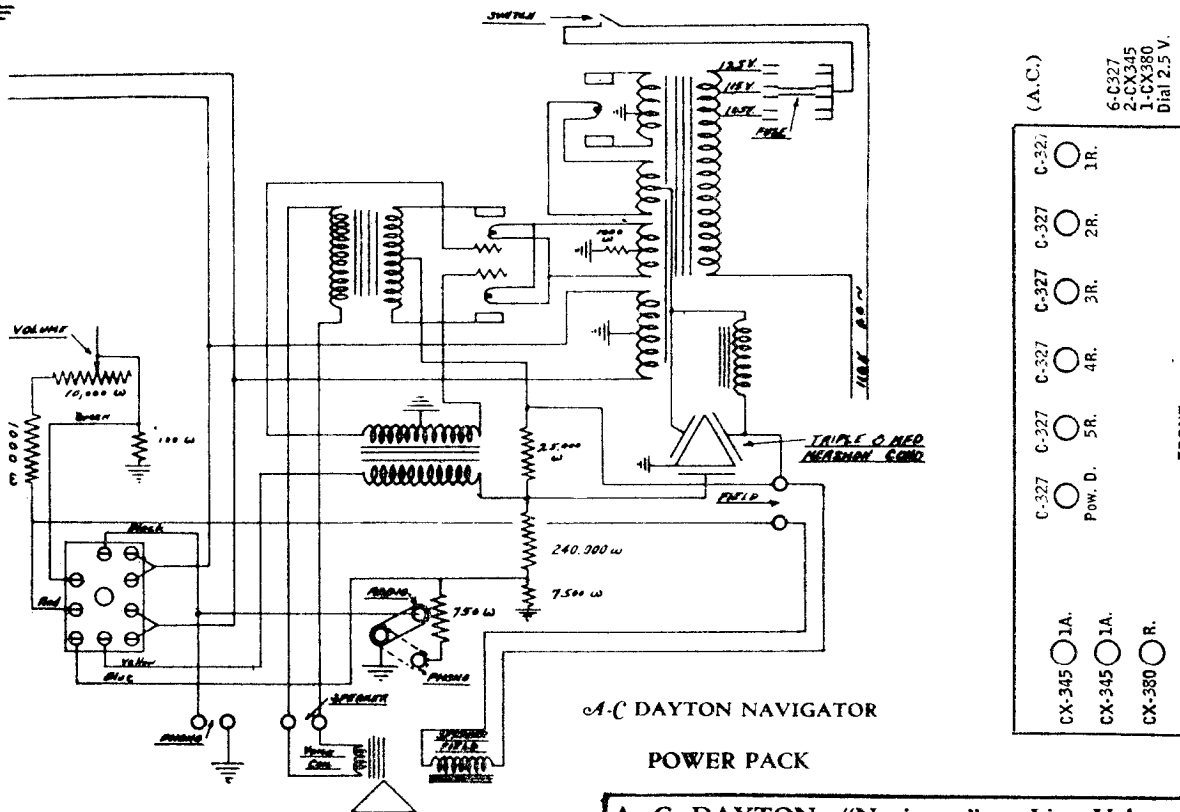
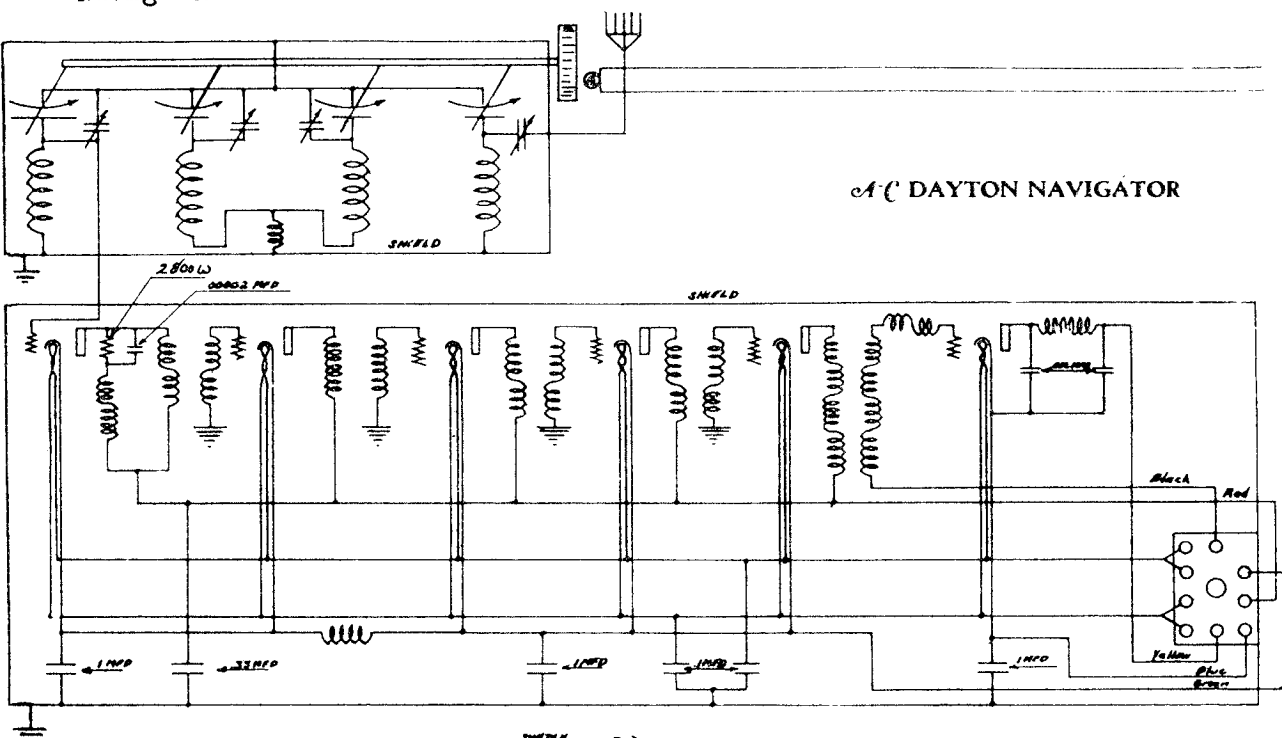
Tube Socket	Plate Volts	Plate Current	Filament Volt	C Bias
1st R. F.	130 V.	1 mil.	2.4 V.	1.5 V.
2nd R. F.	130 V.	4 mils.	1.4 V.	9 V.
3rd R. F.	130 V.	4 mils.	1.4 V.	9 V.
Detector	38 V.	2 mils.	2.4 V.	0 V.
1st A. F.	110 V.	2 mils.	1.4 V.	9 V.
2nd A. F.	350 V.	40 mils.	6.75 V.	63 V.

The above readings can only be taken on a Set Analyzer. They may vary 5% depending on tubes and line voltage.

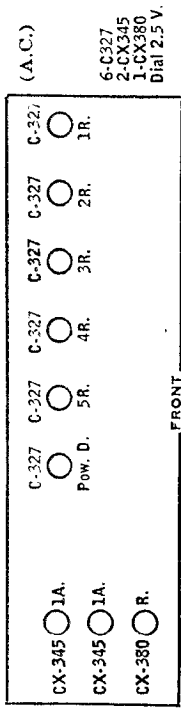
MODEL
"Navigator"

THE A-C DAYTON CO.

A-C DAYTON NAVIGATOR



A-C DAYTON NAVIGATOR
POWER PACK

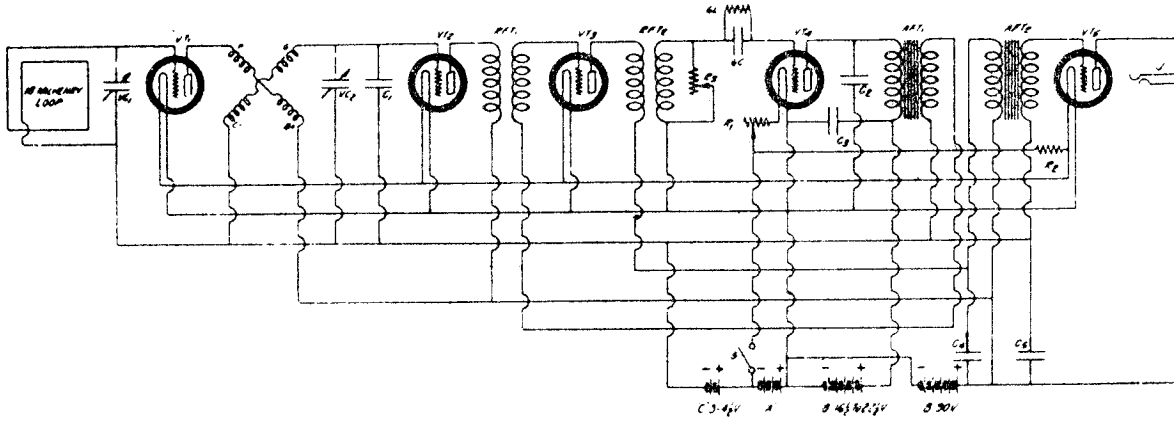


A. C. DAYTON—"Navigator" Line Voltage—115

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RP DET. ETC	TUBE OUT		READINGS PLUG IN SOCKET OF SET									
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS CONTROL GRID	CATHODE HEATER	NORMAL PLATE	PLATE	PLATE	SCREEN GRID		
			(1)	(2)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	227	1st RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-	-	-
2	227	2nd RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-	-	-
3	227	3rd RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-	-	-
4	227	4th RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-	-	-
5	227	5th RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-	-	-
6	227	Det.	2.5	185	2.4	185	15.0	0	1	-	-	-	-	-
7	245	Audio	2.5	235	2.4	230	50	-	22	26	4	-	-	-
8	245	Audio	2.5	235	2.4	230	50	-	22	26	4	-	-	-
9	280	Rect.	4.9	-	4.75	-	-	-	65	-	-	-	-	-

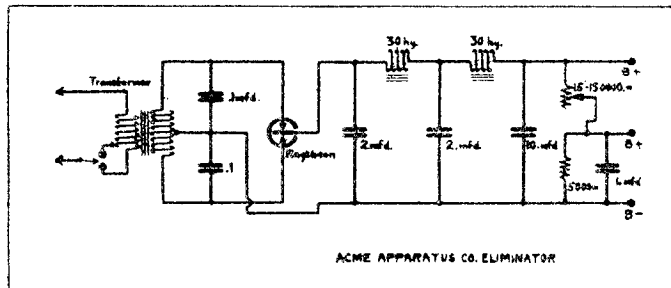
ACME APPARATUS CO.

MODEL 5 Tube Reflex
"B" Unit



CONSTANTS FOR ACME 5 TUBE REFLEX (1926)

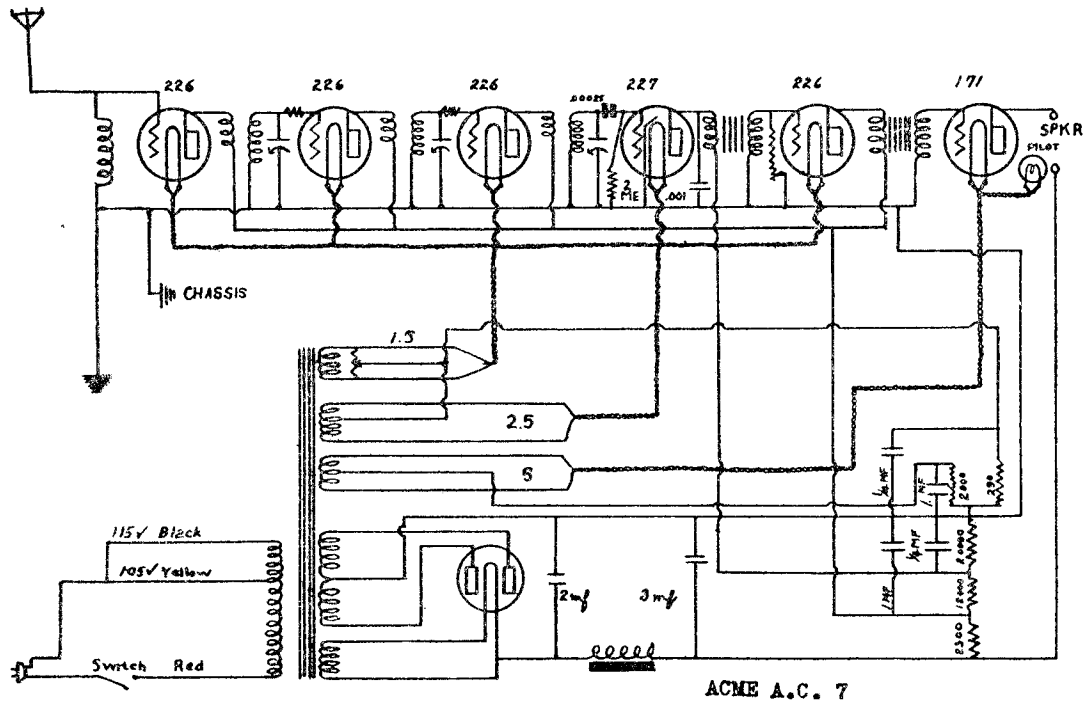
C1	.0004 mfd.	GC	.00025 mfd.
C2	.002 mfd.	G1	.5 to 2 meg
C4	.002 mfd.	R1	6 ohms
C5	1. mfd.	R2	1 ohm
C3	2. mfd.	R3	2000 ohms



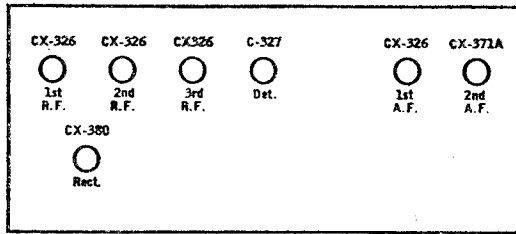
ACME APPARATUS CO. "B" ELIMINATOR (1926)

ACME ELECTRIC & MFG. CO.

MODEL AC-7
SG-83

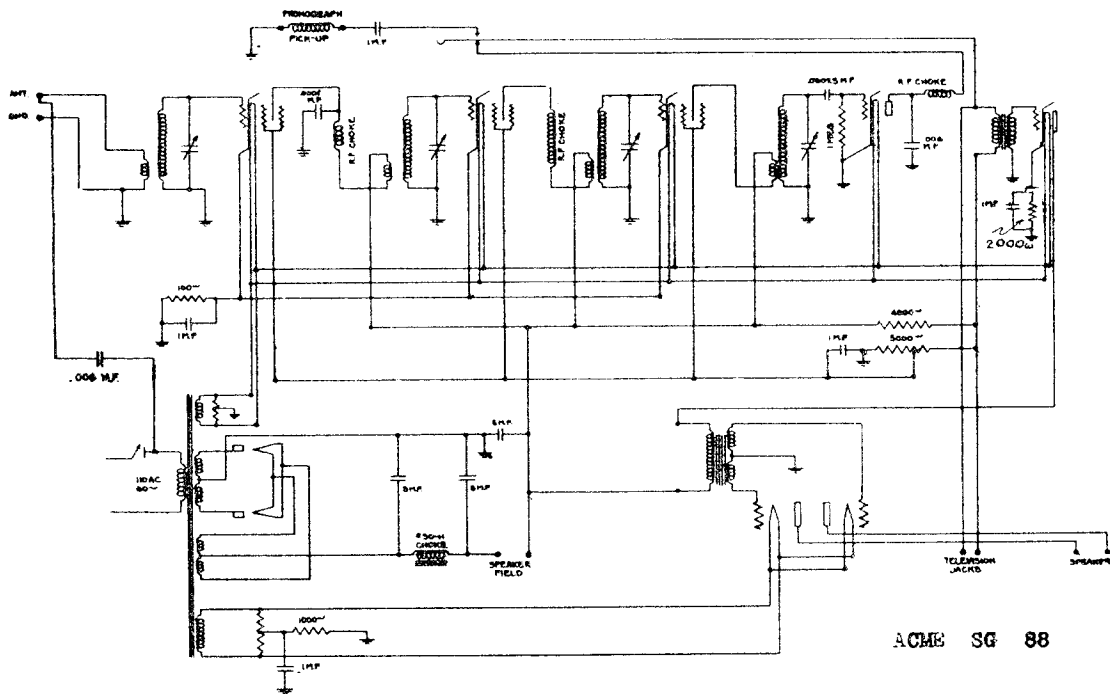
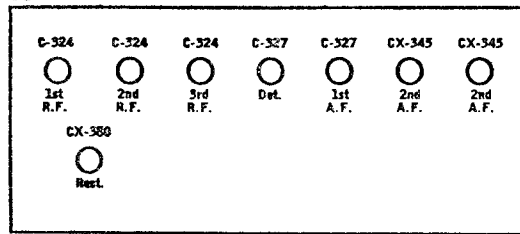


AC7



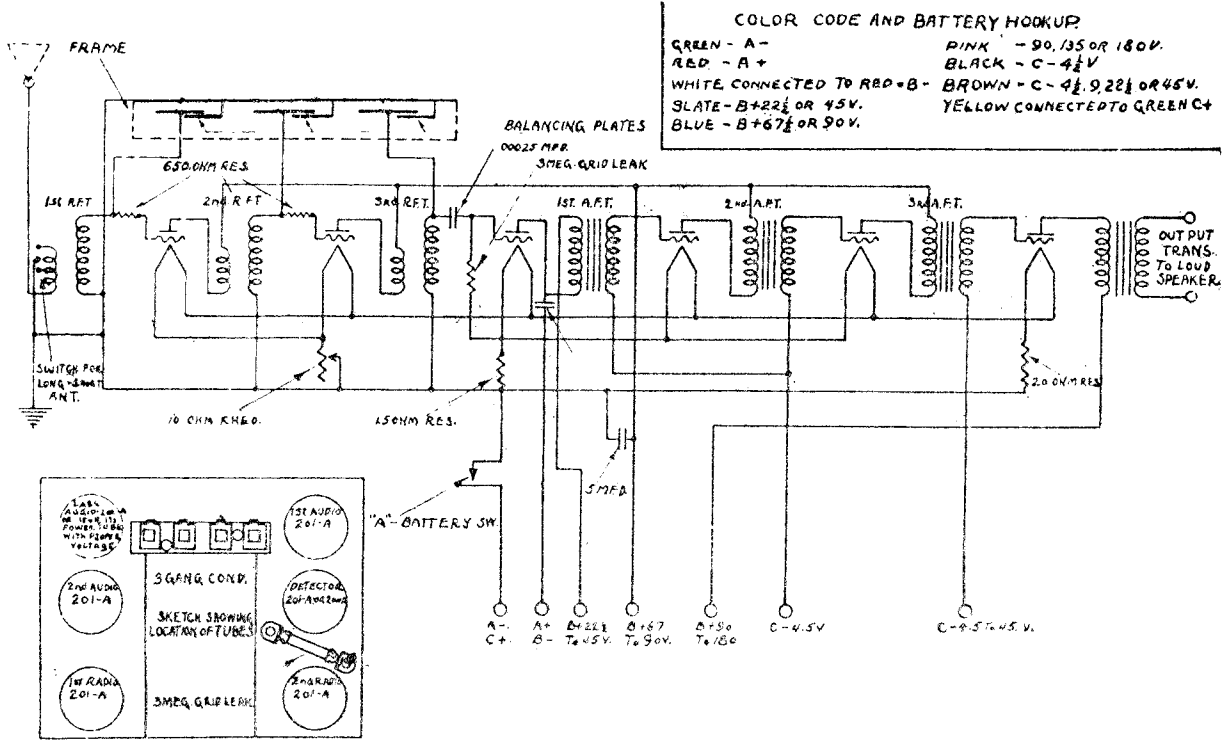
88

(A.C.)

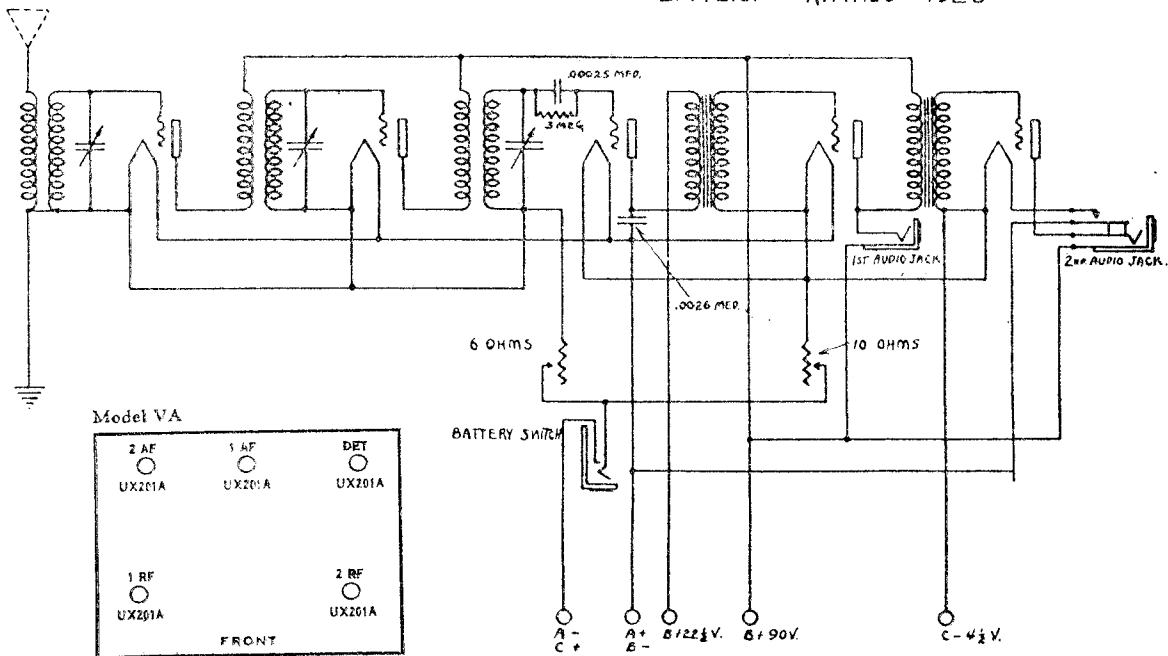


ALL-AMERICAN MOHAWK CORP.

MODEL Navajo
VA
Battery Operated



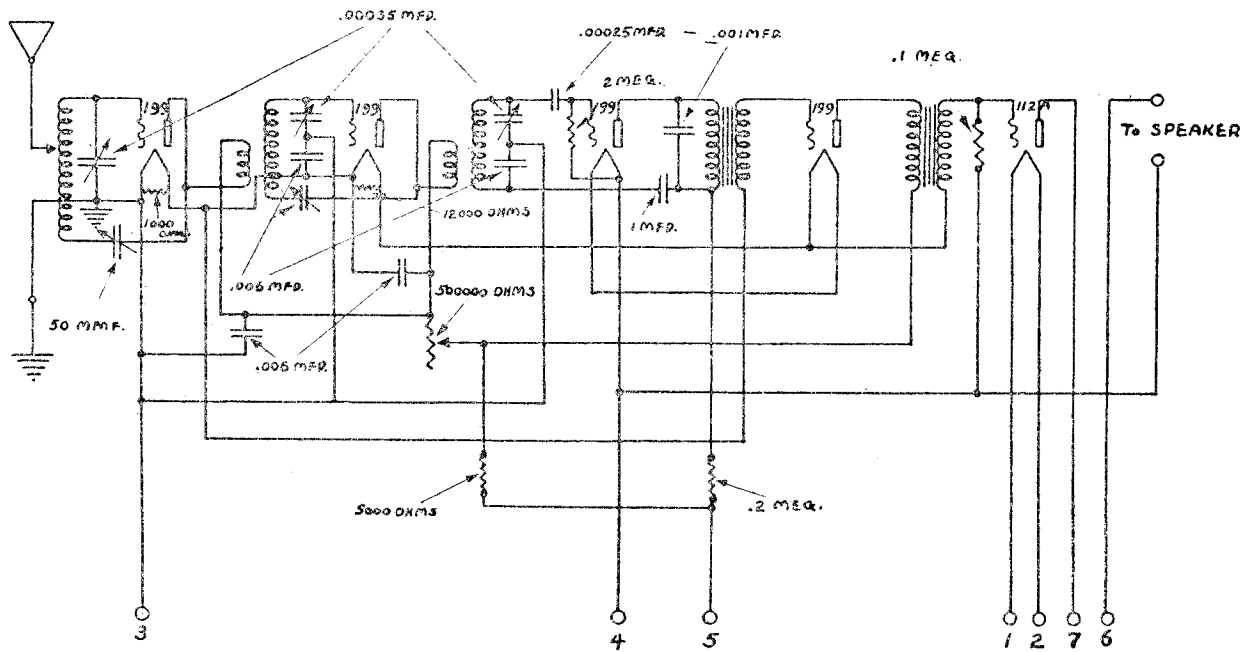
SCHMATIC CIRCUIT of MOHAWK RECEIVER.
BATTERY NAVAJO 1926



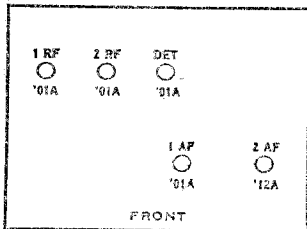
5 TUBE VA CIRCUIT -1925-26-

MODEL 115 -1926 ALL-AMERICAN MOHAWK CORP.

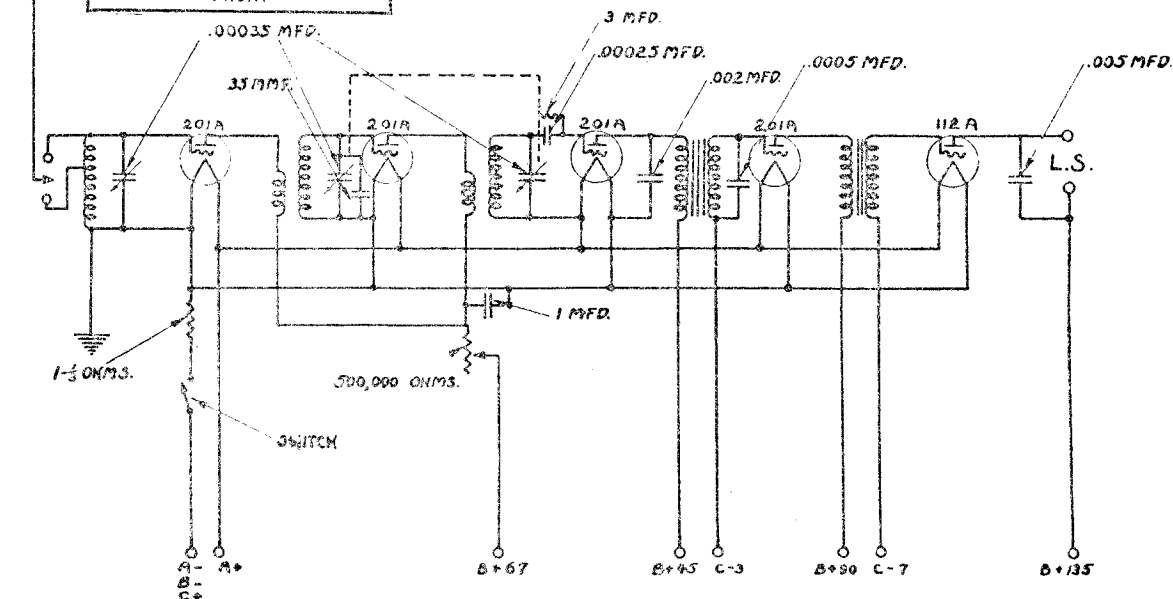
5 Tube All-Electric
 MODEL 115- 1926
 5 Tube All-Battery



Model 115-BO (1926)



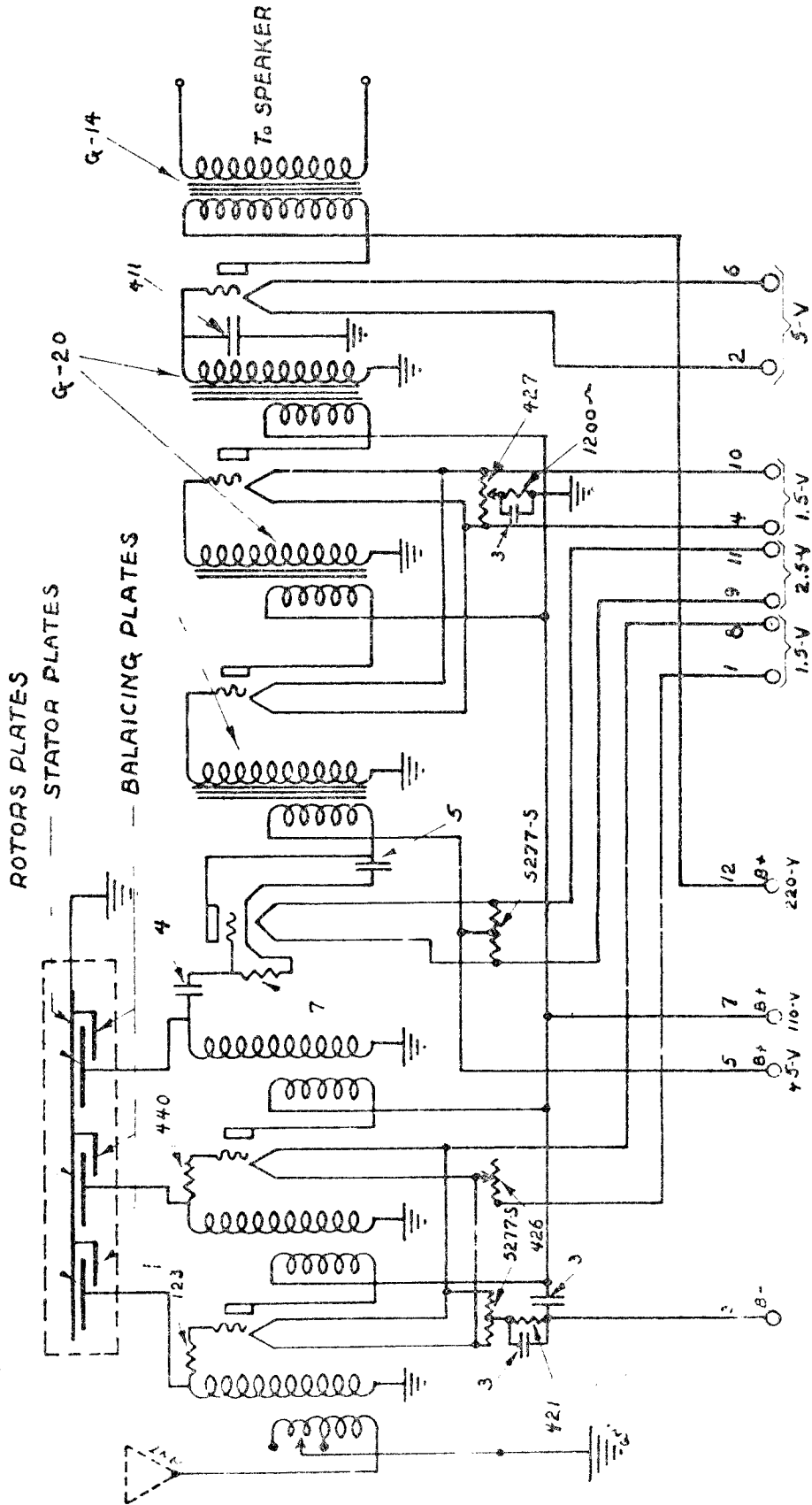
5 TUBE ALL ELECTRIC - 1926.
 MODEL -115



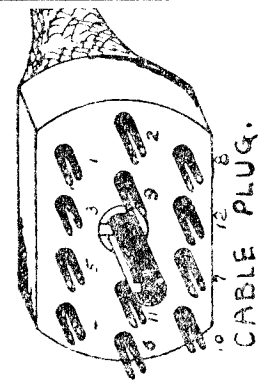
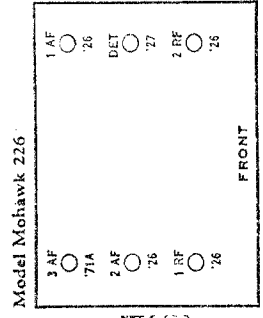
5 TUBE ALL AMERICAN BATTERY SET.
 MODEL 115 - 1926-27.

ALL-AMERICAN MOHAWK CORP.

MODEL Mohawk 1926
All-Electric
226 Type
Receiver Chassis

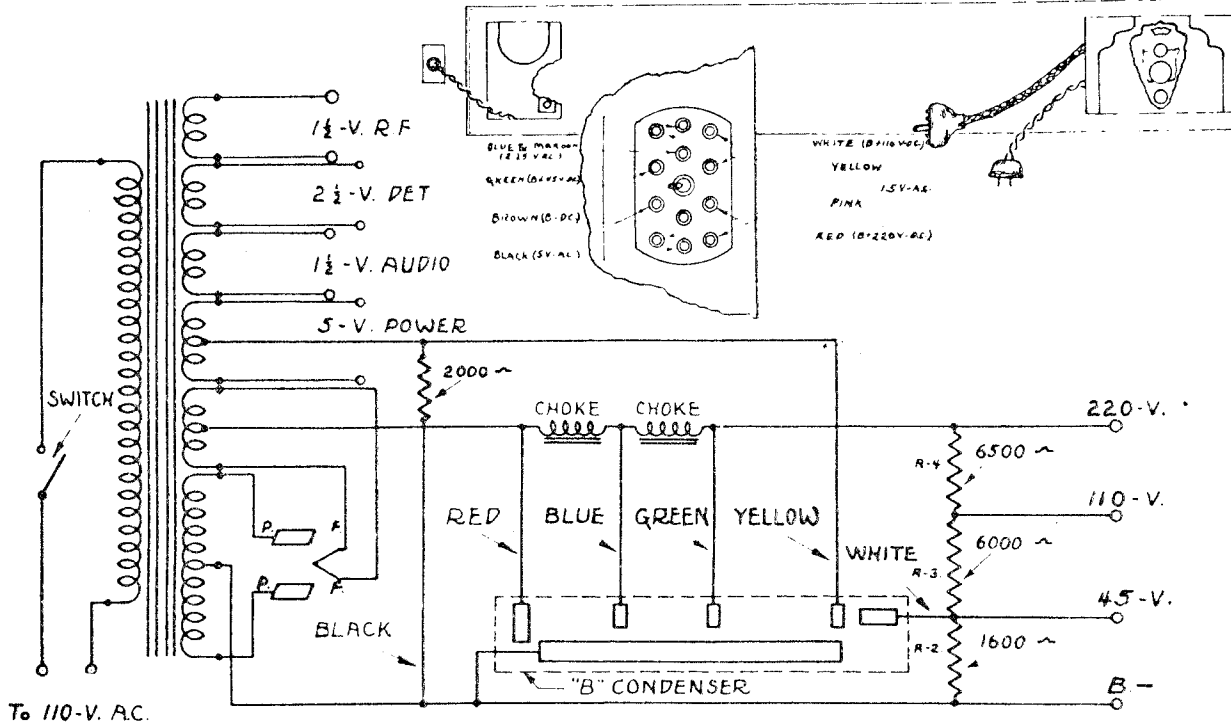


CIRCUIT OF MOHAWK SET - 1926 -
(ALL ELECTRIC)

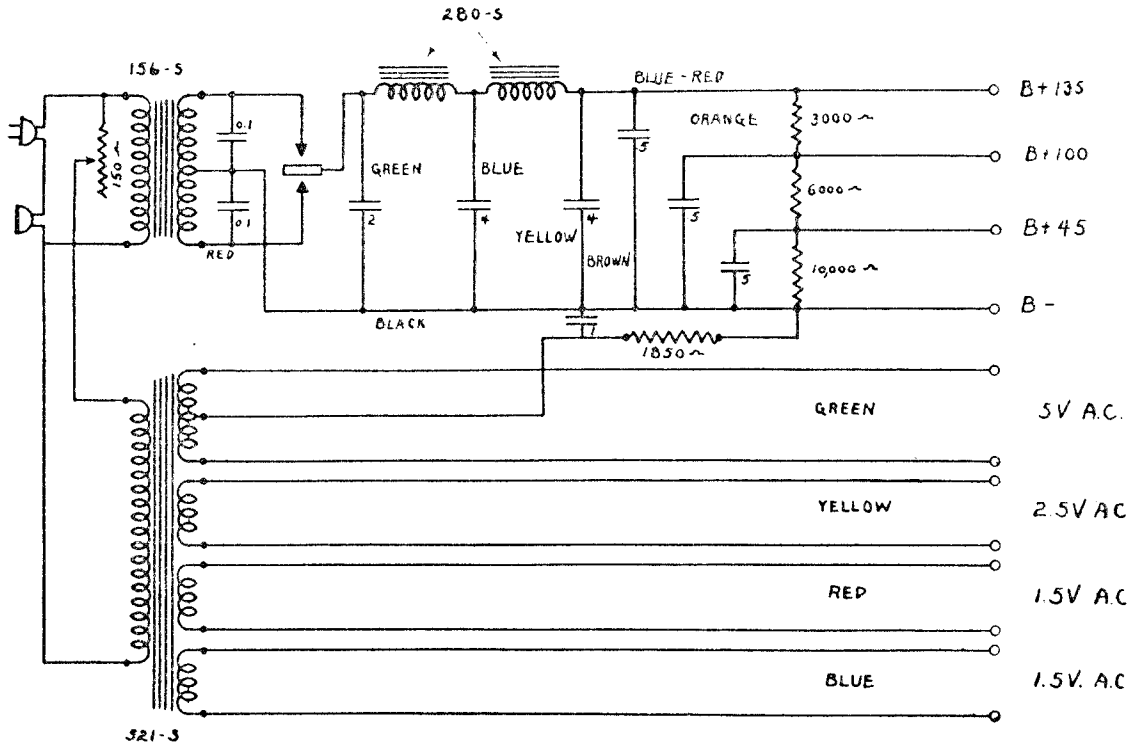


MODEL Mohawk 226
 12 Contact
 Power Pack
 A-10 Eliminator

ALL-AMERICAN MOHAWK CORP.



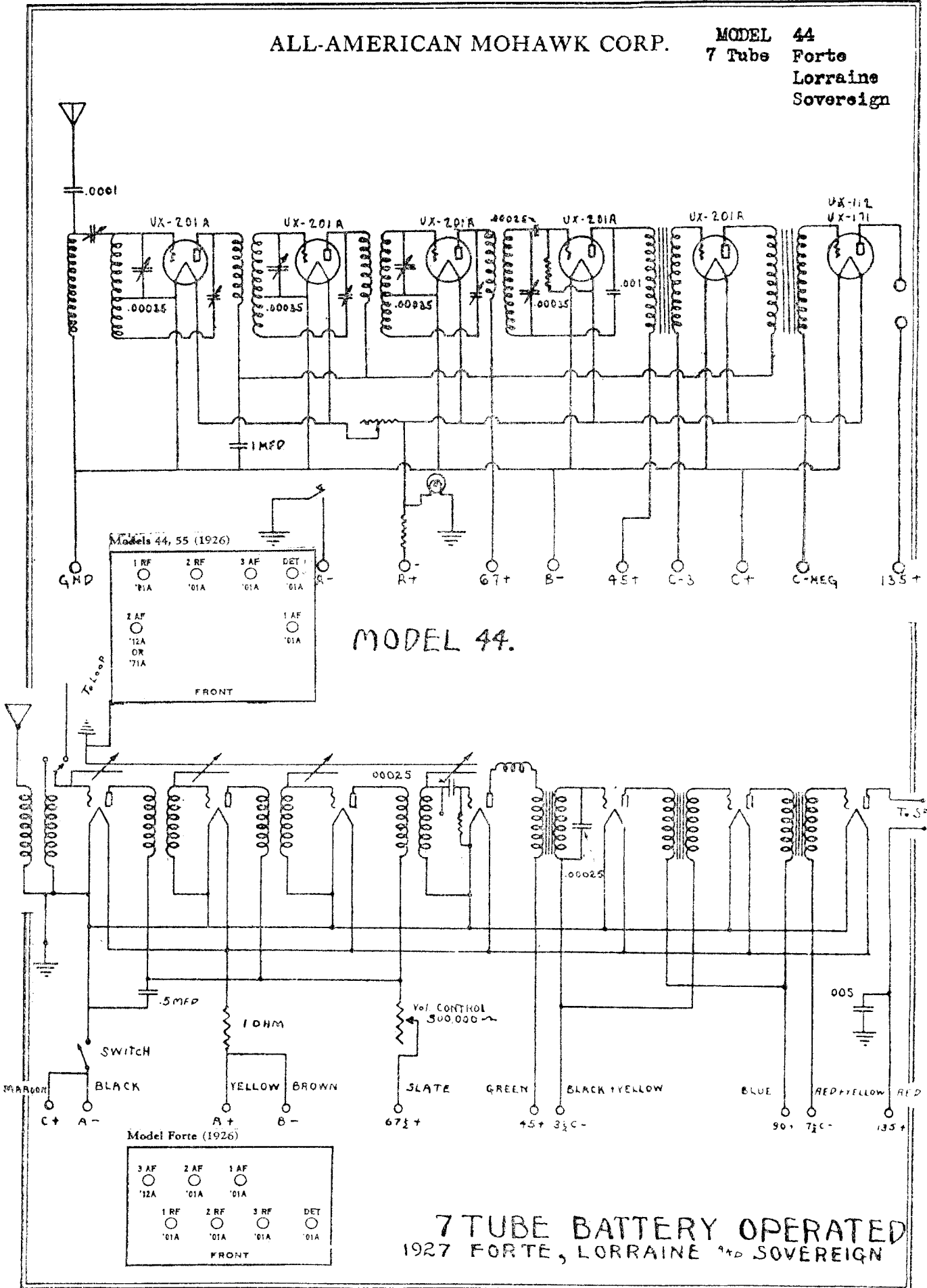
12 CONTACT POWER PACK for Mohawk 226
 WITH NEW TYPE CONDENSER



A-10 MOHAWK ELIMINATOR

ALL-AMERICAN MOHAWK CORP.

MODEL 44
7 Tube Forte
Lorraine
Sovereign

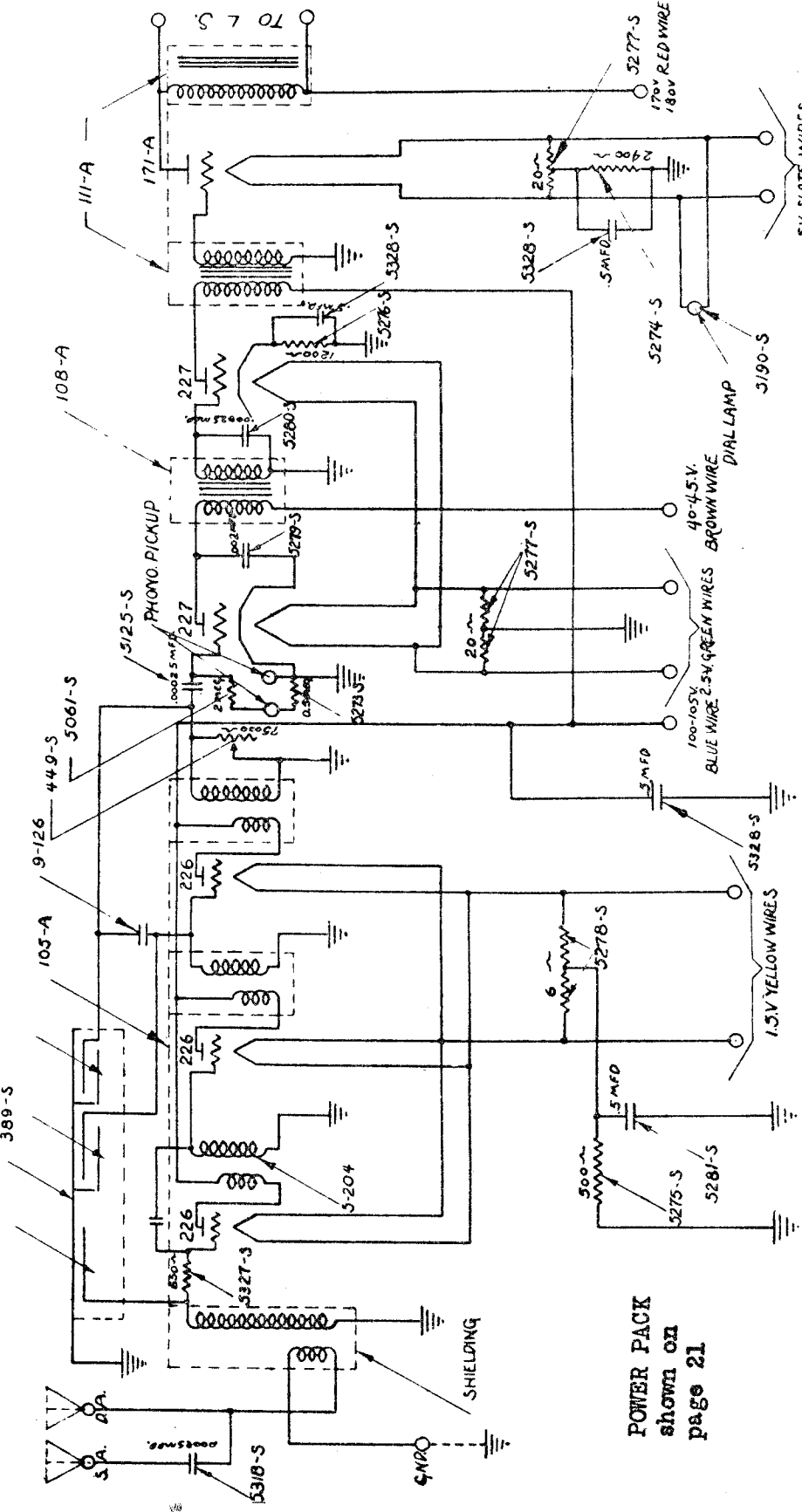


MODEL 44.

7 TUBE BATTERY OPERATED
1927 FORTE, LORRAINE AND SOVEREIGN

MODEL 60,61,62,
65,66
Receiver Chassis

ALL-AMERICAN MOHAWK CORP.



POWER PACK
shown on
page 21

ALL AMERICAN—Models 60-61-62-65-66
Line Voltage 110:—95-115 Volt Tap:—Volume Con-
trol Full

TUBE NO. OR OTHER IDENT.	TYPE OF TUBE	POSITION IN CHASSIS (ST, R.F., DET., ETC.)	TUNE OUT		RECHARGE PLUS IN SOCKET OF SET		TUNE IN TESTS		PLATE CHARGES	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	OUTSIDE VOLTS	INTERNAL VOLTS	PLATE M.A.	GRID M.A.
389-S	5Y4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
105-A	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
171-A	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5278-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5275-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5276-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5277-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5273-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5274-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5275-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5276-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5277-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5278-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5279-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5280-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5281-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5282-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5283-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5284-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5285-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5286-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5287-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5288-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5289-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5290-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5291-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5292-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5293-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5294-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5295-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5296-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5297-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5298-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5299-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-
5300-S	6X4	Rectifier	-	-	4.70	4.70	19.0	-	-	-

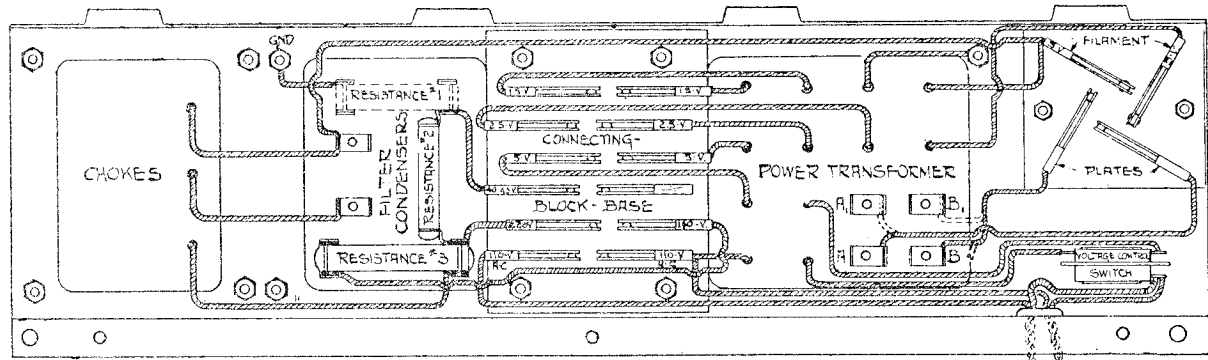
60, 61, 62, 65

- CX-371A ○ 2nd A.F.
- C-327 ○ 1st A.F.
- C-327 ○ Det.
- CX-326 ○ 3rd R.F.
- CX-326 ○ 2nd R.F.
- CX-326 ○ 1st R.F.
- CX-380 ○ Rect.

3-CX326
2-C327
1-CX371A
1-CX380

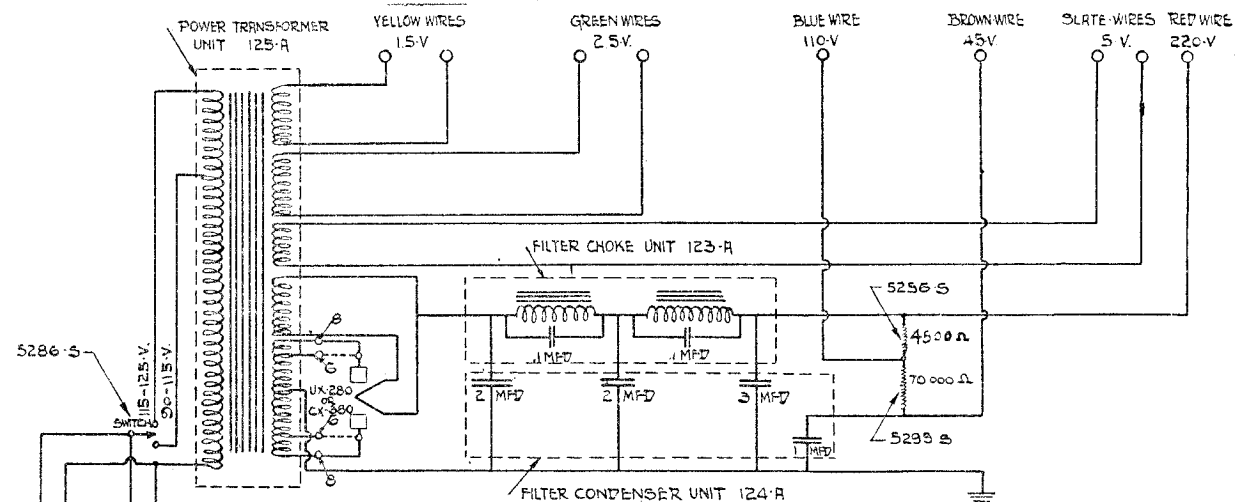
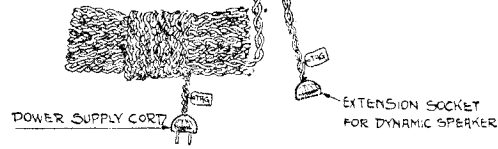
ALL-AMERICAN MOHAWK CORP.

MODEL 60,61,62,
65,66
Power Pack



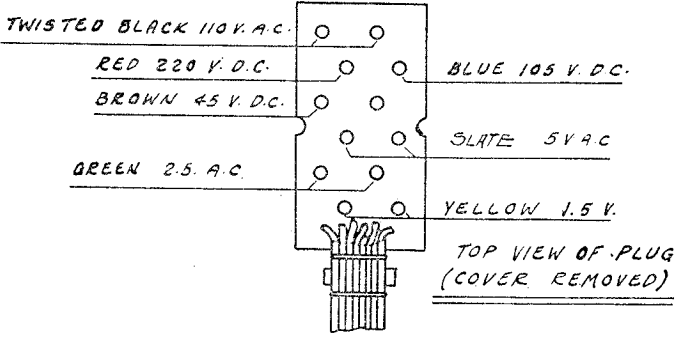
BLUE RESISTANCE #1 = 10,000 Ω
 RED #2 = 25,000 Ω OR ORANGE-70,000 Ω, WITH RES. #1 OUT
 MAROON #3 = 4,500 Ω

NOTE:-
 WIRING FOR 8 TUBE SET-AS SHOWN-
 WIRING FOR 6 TUBE SET- PLATE WIRE 'A' LEAD TO 'A',
 AND PLATE WIRE 'B' LEAD TO 'B',

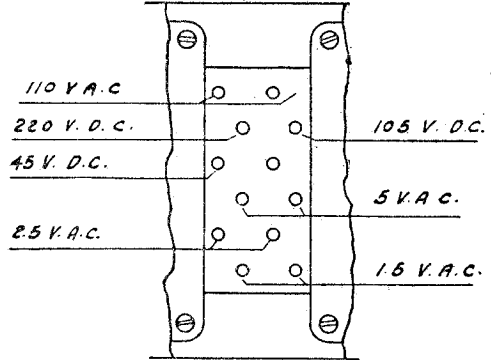


CIRCUIT DIAGRAM OF
 6 & 8 TUBE A.C. SET-POWER PACK

NOTE: ABOVE INDICATED PART NUMBERS ARE THE ELECTRICAL PART AND ASSEMBLY NUMBERS OF ITEMS USED IN CIRCUIT. WHEN ORDERING PARTS OR ASSEMBLIES SPECIFY THIS NUMBER AS WELL AS NAME OF ITEM



TOP VIEW OF PLUG (COVER REMOVED)



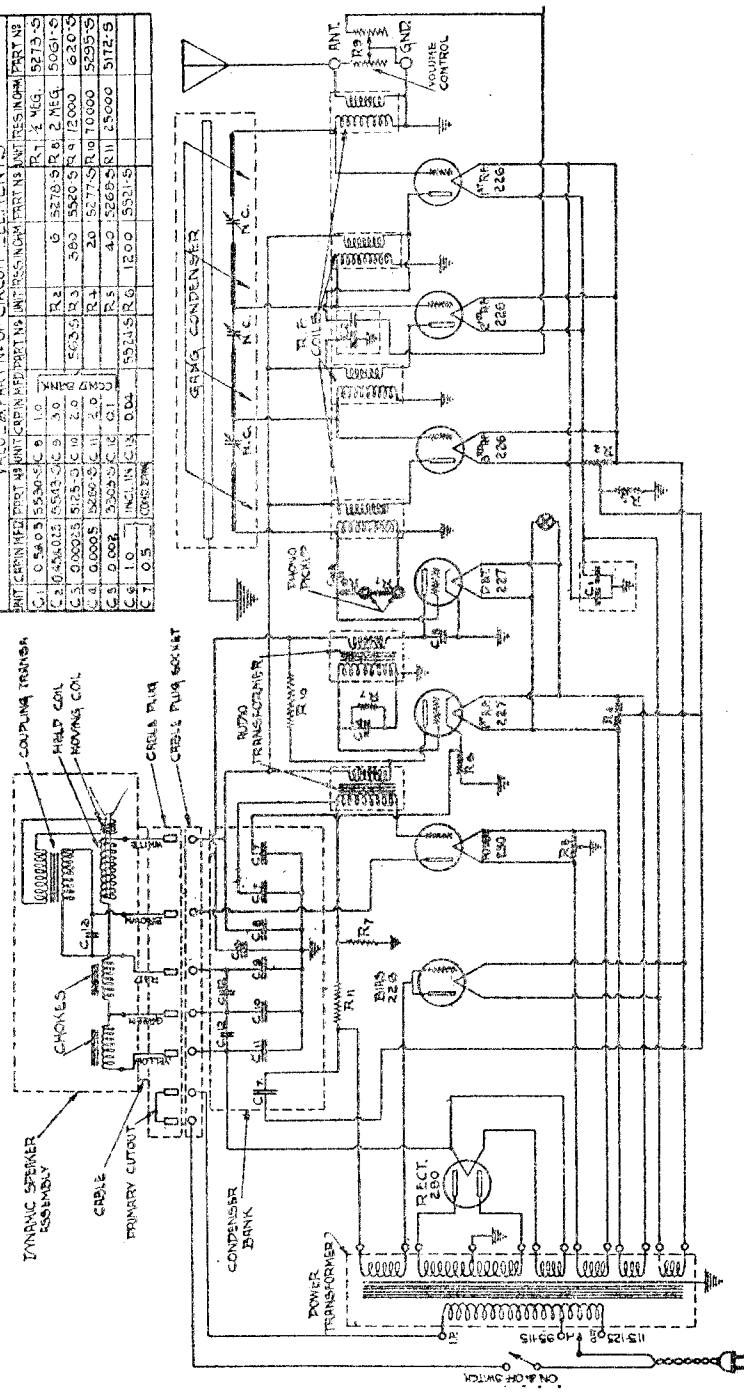
TOP VIEW OF CONNECTING PLUG SOCKET IN POWER PACK

ALL-AMERICAN MOHAWK CORP.

MODEL 70,73,75

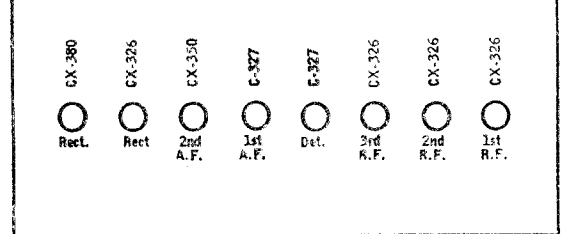
VALUES AND PARTS OF CIRCUIT ELEMENTS

SMT. CAPACITANCE	RESISTANCE	INDUCTIVE REACTANCE	TRANSFORMER PART NO.
C 1 0.0005	R 1 100,000	L 1 100	1-380
C 2 0.0005	R 2 100,000	L 2 100	1-327
C 3 0.0005	R 3 100,000	L 3 100	1-350
C 4 0.0005	R 4 100,000	L 4 100	1-326
C 5 0.0005	R 5 100,000	L 5 100	1-326
C 6 0.0005	R 6 100,000	L 6 100	1-326
C 7 0.0005	R 7 100,000	L 7 100	1-326



70, 73, 75

(A.C.)



HUM— If an undue amount of hum is experienced it may be caused by any of the following:—Defective tube in either the detector or first a.f. stage. Center tapped resistors open on one side of filament or heater connection or one-half of center tapped resistor shorted out. Center tap of 20 ohm resistor across 227 heater terminals open. A grounded 226 filament or short circuited grid bias resistor.

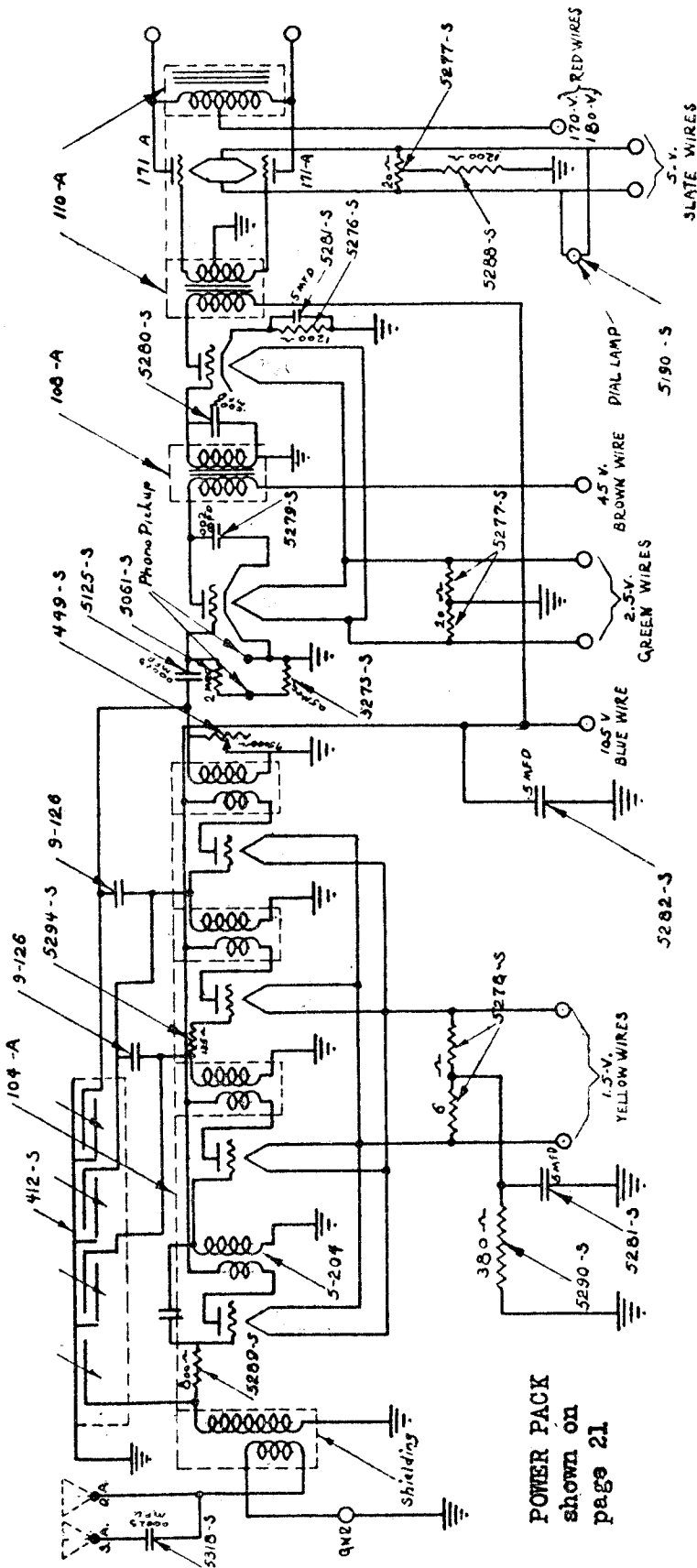
The hum will also be increased by a defective 226 bias tube for the 250 power tube, filter or load resistor, or by-pass condensers short circuited or open. The adjustable center tapped resistor on the 250 tubes filament being out of adjustment will likewise cause an increase in the hum level. As the filter circuit is a part of the loud speaker assembly it may be checked for hum trouble by substituting another speaker assembly. The condenser bank and power transformer may be substituted in checking for defects in these units which may cause hum. Generally most causes of hum are defective 227 tubes and improper adjustment of the 250 tube filament center tapped resistor.

Possible causes of hum in the power supply and their remedy will be taken up in the paragraph "Power Unit Servicing". It is important that a good ground connection be employed with this receiver as sometimes the hum level will increase where a poor ground connection is used.

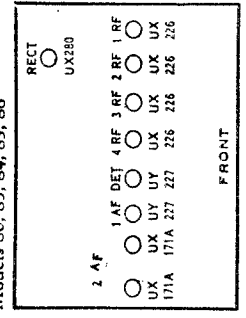
TUBE VOLTAGE READINGS— The following gives the values of the various tube readings which should be obtained: When line voltage is 110 V. A.C., and the line voltage control switch on power pack is in the 95-115 position: (Note these values will vary slightly.)

- R. F. tubes 226-326 type
Filament voltage—1.45 to 1.50, "B" voltage—100 to 120, "C" voltage—7 to 9.
- Detector 227-327 type
Heater voltage—2.40 to 2.50, "B" voltage—35 to 50, Cathode Bias, 0, Heater Bias 6-9 plus.
- First A.F. Amplifier 227-327 type
Heater voltage—2.40 to 2.50, "B" voltage—100 to 120, Cathode bias—6 to 9, Heater Bias 6-9 plus.
- Power Amplifier 250-350
Filament voltage—7.30 to 7.40, "B" voltage—300 to 325 "C" voltage—52 to 50.
- Bias Tube
Filament voltage 1.4 to 1.50.

ALL-AMERICAN MOHAWK CORP. MODEL 80, 83, 84,
85, 86, 88
Receiver Chassis



POWER PACK
shown on
page 21



Models 80, 83, 84, 85, 86

ALL AMERICAN—Models 80-83-84-85-86-88
Line Voltage 110—95-115 Volt Tap—Volume Con-
trol Full—2nd A. F. Stage—2 Tubes Push Pull

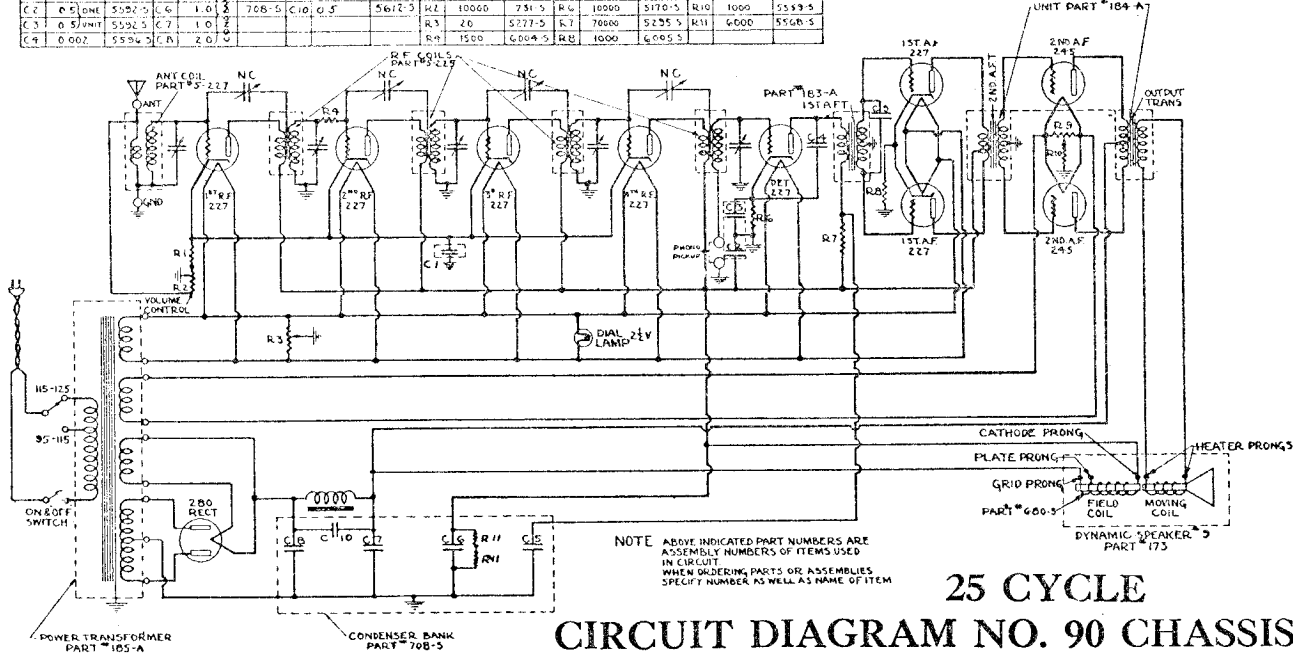
TUBE IN ORDER	TYPE OF TUBE	POSITION	TUBE OUT			TUBE IN TESTER			REMAINING PLUG IN SOCKET OF SET		
			A	B	C	A	B	C	A	B	C
		1ST. AF. DET. ETC.	VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	PLATE	SCREEN	GRID
1	226	1st. R.F.	1.4	120	1.25	112	9	3.5	17.5	3.5	3.5
2	226	2nd. R.F.	1.4	120	1.25	112	9	3.5	17.5	3.5	3.5
3	226	3rd. R.F.	1.4	120	1.25	112	9	3.5	17.5	3.5	3.5
4	226	4th. R.F.	1.4	120	1.25	112	9	3.5	17.5	3.5	3.5
5	227	Detector	2.4	110	2.20	40	0	2.2	2.2	2.2	2.2
6	227	1st. A.F.	2.4	120	2.20	112	0	4.4	6.4	2.0	2.0
7	171A	2nd. A.F.	4.7	180	4.50	162	42	16.0	18.0	2.0	2.0
8	171A	2nd. A.F.	4.7	180	4.50	162	42	16.0	18.0	2.0	2.0
9	280	Rectifier	-	-	4.70	-	-	-	20.0	-	-

MODEL 90
25 Cycles

ALL-AMERICAN MOHAWK CORP.

182-W

VALUE AND PART NO. OF CIRCUIT ELEMENTS											
UNIT	CAP IN MFD	PART N°	UNIT	CAP IN MFD	PART N°	UNIT	RES IN OHMS	PART N°	UNIT	RES IN OHMS	PART N°
C1	0.01	5593-S	C5	1.0	708-S	R1	350	5520-S	R5	100	5594-S
C2	0.5	5592-S	C6	1.0	708-S	R2	10000	731-S	R6	10000	5170-S
C3	0.5	5592-S	C7	1.0	708-S	R3	20	5177-S	R7	70000	5255-S
C4	0.002	5594-S	C8	2.0	708-S	R4	1500	6004-S	R8	1000	6005-S



25 CYCLE
CIRCUIT DIAGRAM NO. 90 CHASSIS

VOLTAGE READINGS.

Type of Tube	Position of Tube	Tube in Tester			Cathode-Heater Volts	Normal Plate M. A.
		A Volts	B Volts	C Volts		
227	1 R. F.	2.3	100	6.25	6.0	3.5
227	2 R. F.	2.4	100	5.50	5.5	3.5
227	3 R. F.	2.3	95	6.25	5.5	3.5
227	4 R. F.	2.4	100	6.25	5.5	3.5
227	DET.	2.3	56	5.00	5.0	0.5
227	1 P. P.	2.4	90	5.00	5.0	3.5
227	1 P. P.	2.4	90	5.00	6.0	3.5
245	2 P. P.	2.2	210	42.00		24.0
245	2 P. P.	2.2	210	42.00		24.0
280	RECT.	4.5				38 x 2

SOCKET LAYOUT SAME AS NO. MODEL 90 - 60 CYCLE

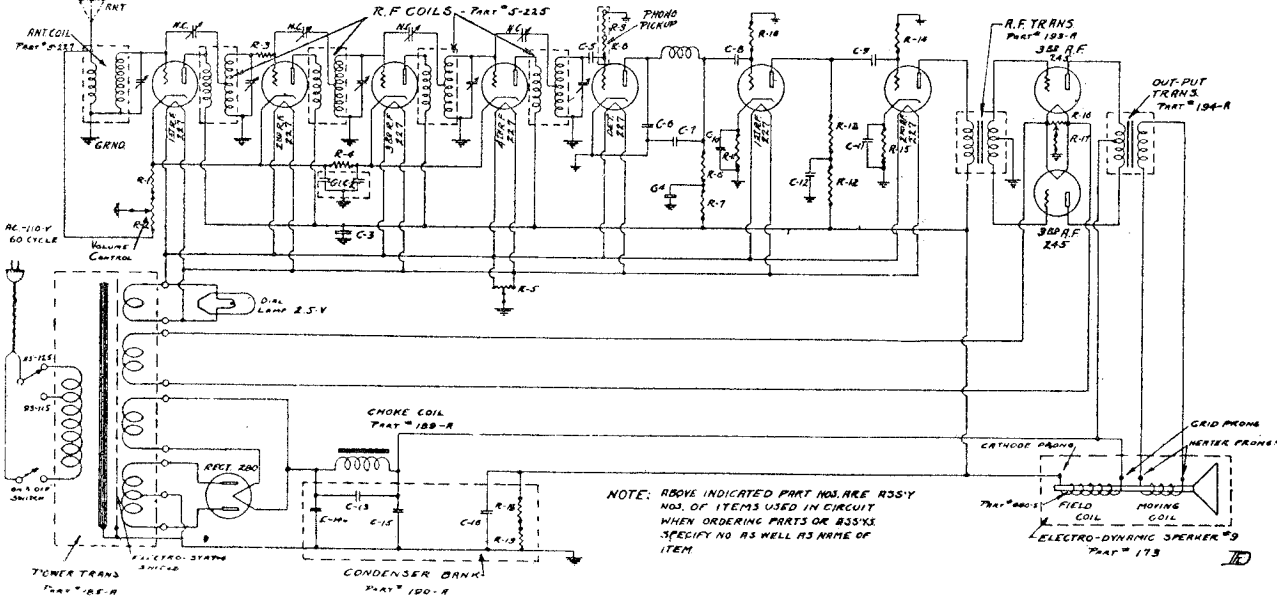
ALL-AMERICAN MOHAWK CORP.

MODEL 90
60 Cycle

VALUE AND PART NUMBER OF CIRCUIT ELEMENTS

UNIT	CAP. IN MFD.	PART NO.	UNIT	CAP. IN MFD.	PART NO.	UNIT	RES. IN OHMS	PART NO.	UNIT	RES. IN OHMS	PART NO.	UNIT	RES. IN OHMS	PART NO.	UNIT	RES. IN OHMS	PART NO.
C-7	0.1	5293-5	C-7	0.001	5124-5	R-1	380	5220-5	R-7	70,000	5295-5	R-13	25,000	5172-5	R-19	6,000	5407-5
C-2	0.1	5293-5	C-8	0.01	5203-5	R-2	70,000	731-5	R-8	2 Megohms	5001-5	R-14	0.5% mho	5221-5			
C-3	0.1	5292-5	C-9	0.01	5203-5	R-3	10,000	5594-5	R-9	0.5	5221-5	R-15	2,400	5274-5			
C-4	0.5	5292-5	C-10	0.5	5203-5	R-4	100	5277-5	R-10	20	5274-5	R-16	20	5277-5			
C-5	0.00025	5125-5	C-11	0.5	5203-5	R-5	20	5277-5	R-11	2,400	5274-5	R-17	1,000	5559-5			
C-6	0.001	5124-5	C-12	1.0	5203-5	R-6	70,000	5295-5	R-12	70,000	5295-5	R-18	6,000	5407-5			

180-W

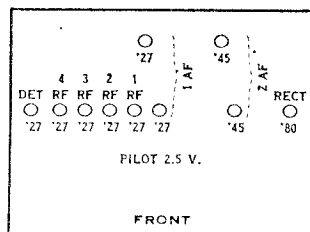


Lyric No. 90 A. C. receiver
—60 CYCLE

TUBE VOLTAGE AND CURRENT READINGS.
Below is given a standard set of readings for the tubes of the Lyric A. C. No. 90 receiver, which will serve as a reference in tube voltage and plate current readings:

Type of Tube	Position of Tube	Tube Out		Tube in Tester			Cathode-Heater Volts	Normal Plate
		A Volts	B Volts	A Volts	B Volts	C Volts		
227	1 R. F.	2.45	120	2.40	114	6.5	6.5	5.3
227	2 R. F.	2.45	120	2.40	115	6.5	6.5	4.6
227	3 R. F.	2.45	120	2.40	113	7.5	7.5	5.8
227	4 R. F.	2.45	120	2.40	113	7.5	7.5	5.9
227	DET.	2.45	84	2.40	16	.5	.0	.7
227	1 A. F.	2.45	94	2.40	30	.5	2.5	1.0
227	2 A. F.	2.45	128	2.40	106	1.5	7.0	3.6
245	P. P.	2.55	256	2.45	232	45.0		23.0
245	P. P.	2.55	256	2.45	232	45.0		23.0
280	RECT.	5.30		4.90				78.0

Models 90, 93, 94, 95 (1929)

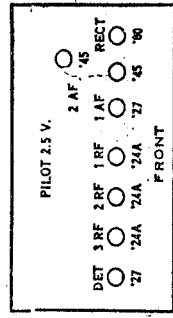
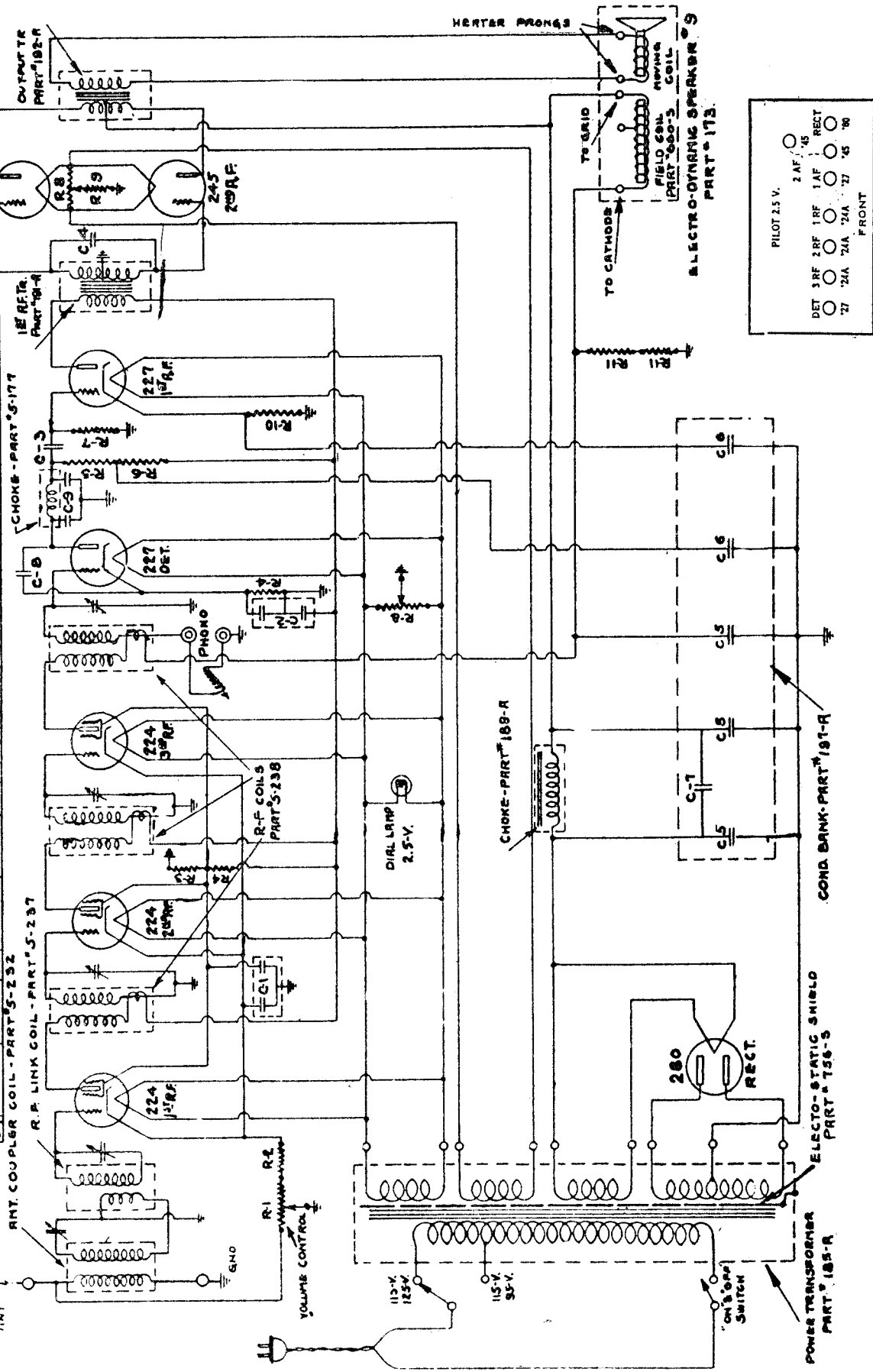


MODEL 96
60 Cycle

ALL-AMERICAN MOHAWK CORP.

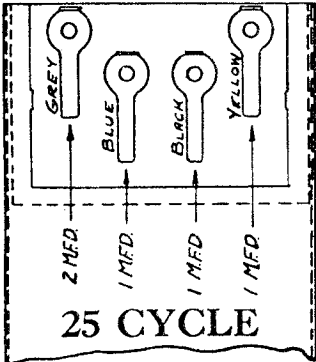
VALUE AND PART NO. OF CIRCUIT ELEMENTS

UNIT CAP. INFO	PART NO.	UNIT	REVISION	PART NO.	UNIT	REVISION	PART NO.	UNIT	REVISION
C1 Two - 5	5328-S	C3	2	COND.	R1	10 000	731-S	RES.	1000
C2 Two - 5	5592-S	C6	1	COND.	R2	300	3562-S	RES.	2000
C3 01	5603-S	C7	1	COND.	R3	25000	5172-S	RES.	6000
C4 00025	5125-S	C8	1	COND.	R4	10 000	5170-S	RES.	20

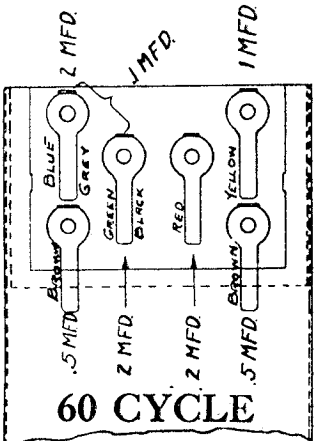


ALL-AMERICAN MOHAWK CORP.

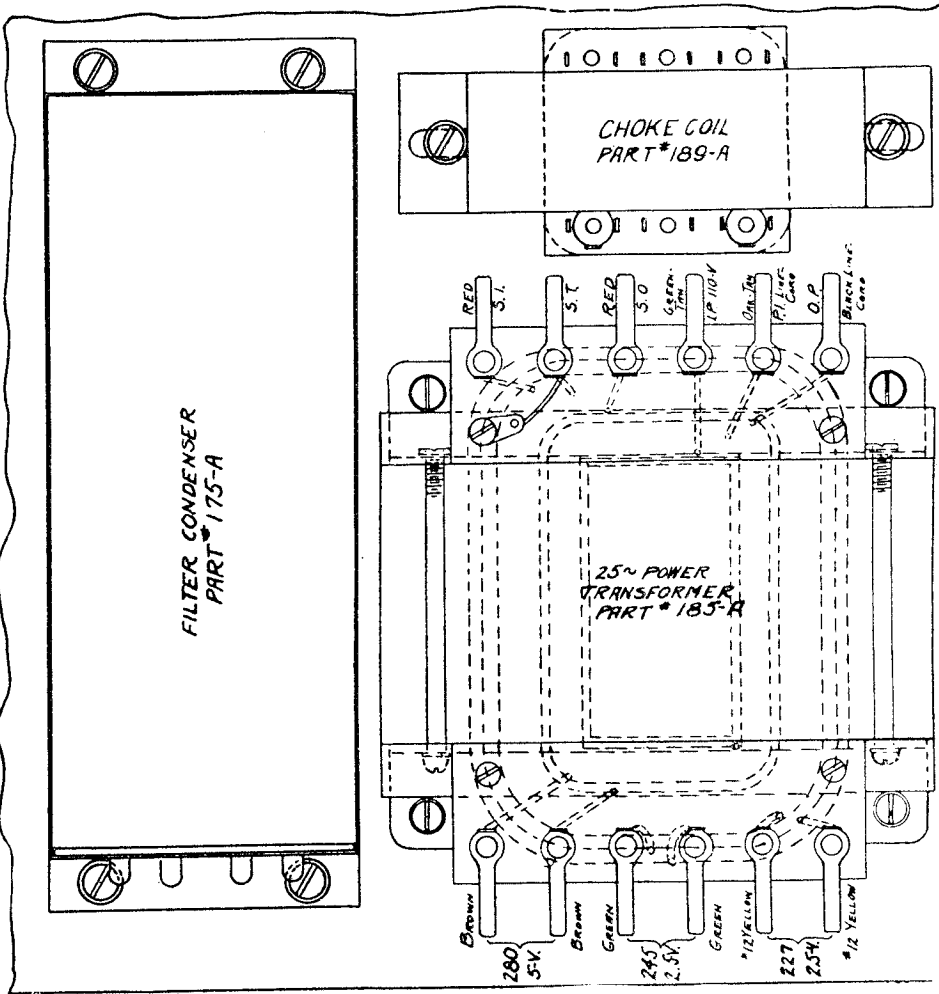
MODEL 90
Data



FRONT VIEW OF
CONDENSER TERMINALS

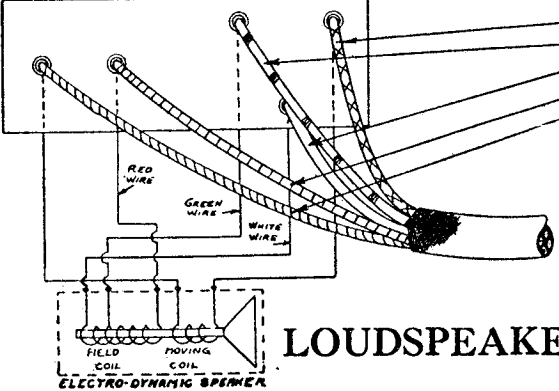


FRONT VIEW OF
CONDENSER TERMINALS

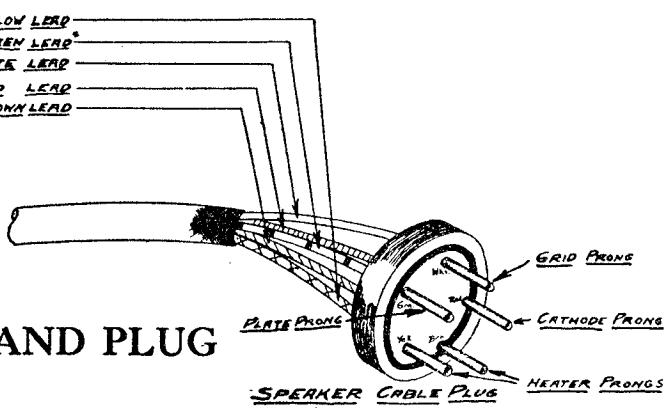


POWER PACK TERMINALS NO. 90 CHASSIS

SPEAKER TERMINAL STRIP

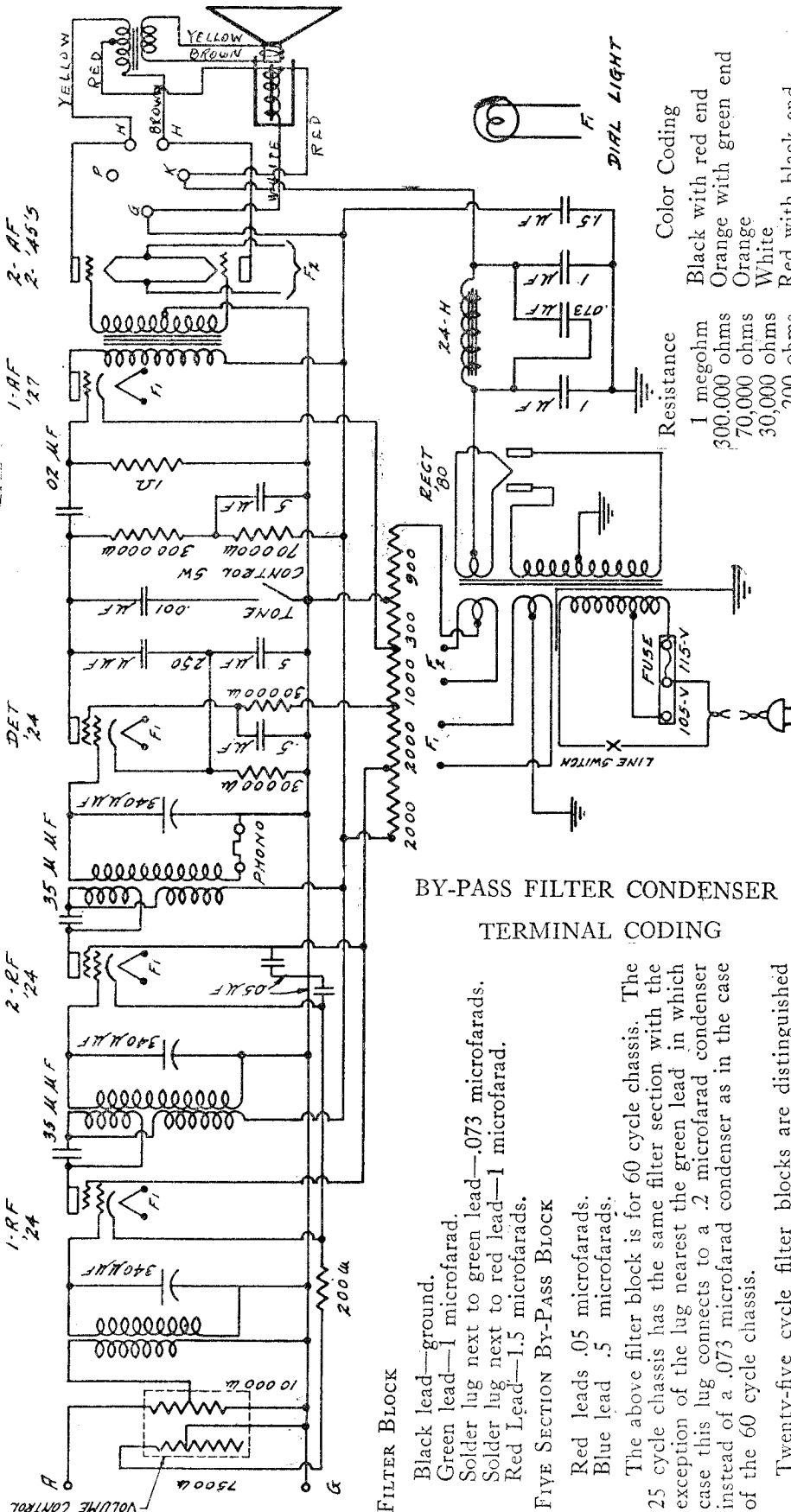


LOUDSPEAKER AND PLUG



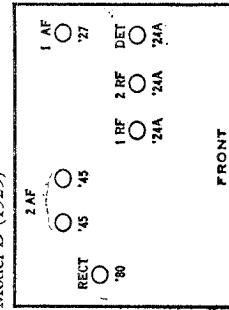
MODEL LYRIC D

ALL-AMERICAN MOHAWK CORP.



- Color Coding**
- Black with red end
 - Orange with green end
 - Orange
 - White
 - Red with black end
- Resistance**
- 1 megohm
 - 300,000 ohms
 - 70,000 ohms
 - 30,000 ohms
 - 200 ohms

Model D (1929)



BY-PASS FILTER CONDENSER
TERMINAL CODING

FILTER BLOCK

- Black lead—ground.
- Green lead—1 microfarad.
- Solder lug next to green lead—.073 microfarads.
- Solder lug next to red lead—1 microfarad.
- Red Lead—1.5 microfarads.

FIVE SECTION BY-PASS BLOCK

- Red leads .05 microfarads.
- Blue lead .5 microfarads.

The above filter block is for 60 cycle chassis. The 25 cycle chassis has the same filter section with the exception of the lug nearest the green lead in which case this lug connects to a .2 microfarad condenser instead of a .073 microfarad condenser as in the case of the 60 cycle chassis.

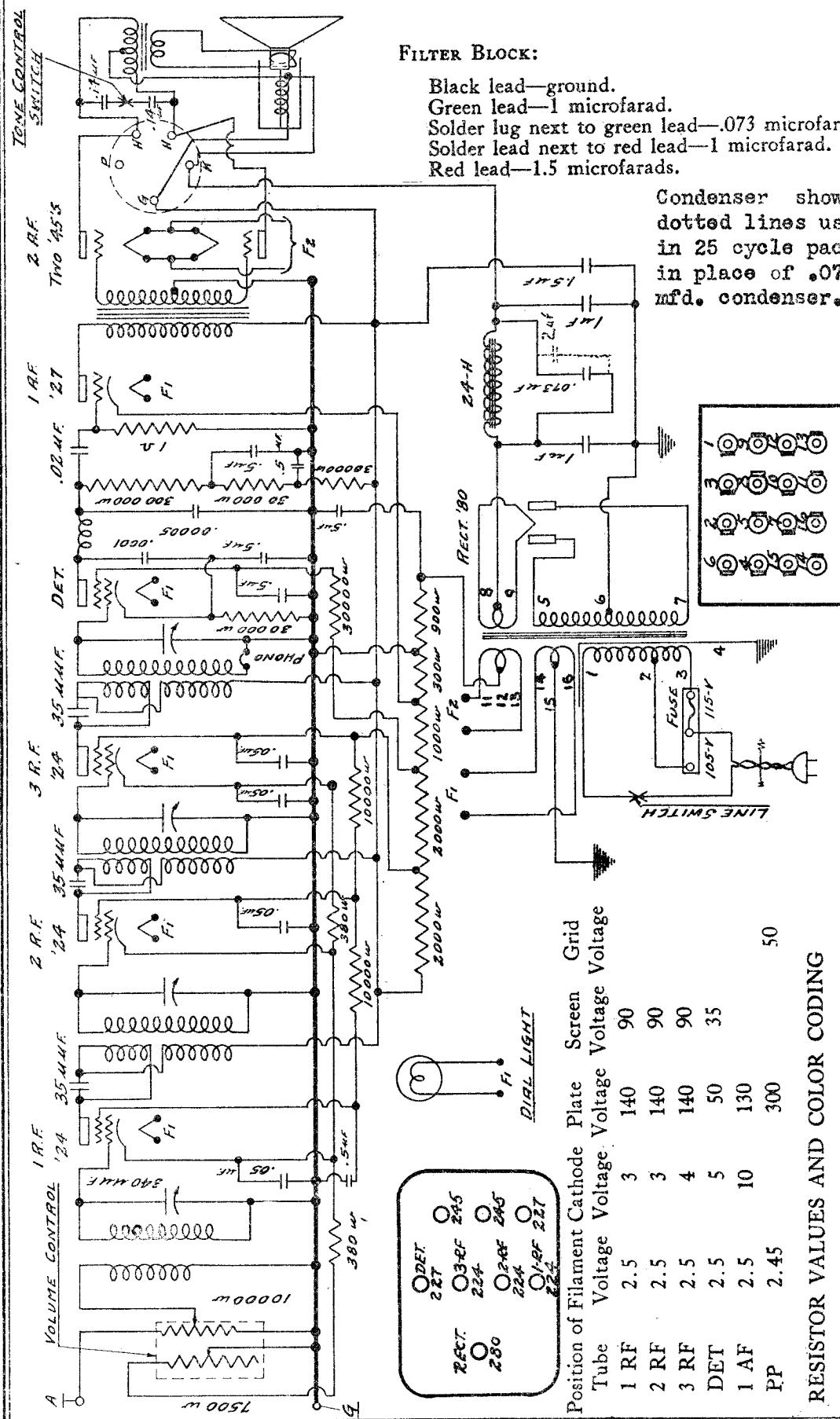
Twenty-five cycle filter blocks are distinguished from sixty cycle blocks by the green dot on the terminal strip at the bottom.

Below is a standard list of voltage readings for the tubes of the LYRIC AC Model D receiver:

Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
224	1 RF	2.5	1.6	140	90	
224	2 RF	2.5	1.6	140	90	
224	DET	2.5	5	50	35	
227	1 AF	2.5	10	130		
245	PP	2.45		300		50
245	PP	2.45		300		50

ALL-AMERICAN MOHAWK CORP.

MODEL H



FILTER BLOCK:

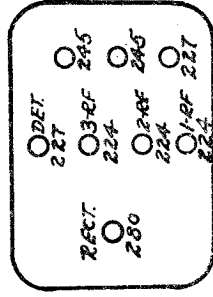
Black lead—ground.
 Green lead—1 microfarad.
 Solder lug next to green lead—.073 microfarads.
 Solder lead next to red lead—1 microfarad.
 Red lead—1.5 microfarads.

Condenser shown in dotted lines used in 25 cycle pack in place of .073 mfd. condenser.

POWER TRANSFORMER

FIXED CONDENSER VALUES AND COLOR CODING

Color Coding Five Section By-Pass Block, LEAD TYPE:
 Capacity
 35 micro-microfarads Grey dot
 50 micro-microfarads Blue dot and white dot
 100 micro-microfarads Orchid dot
 Red leads .05 microfarads.
 Blue lead .5 microfarads.



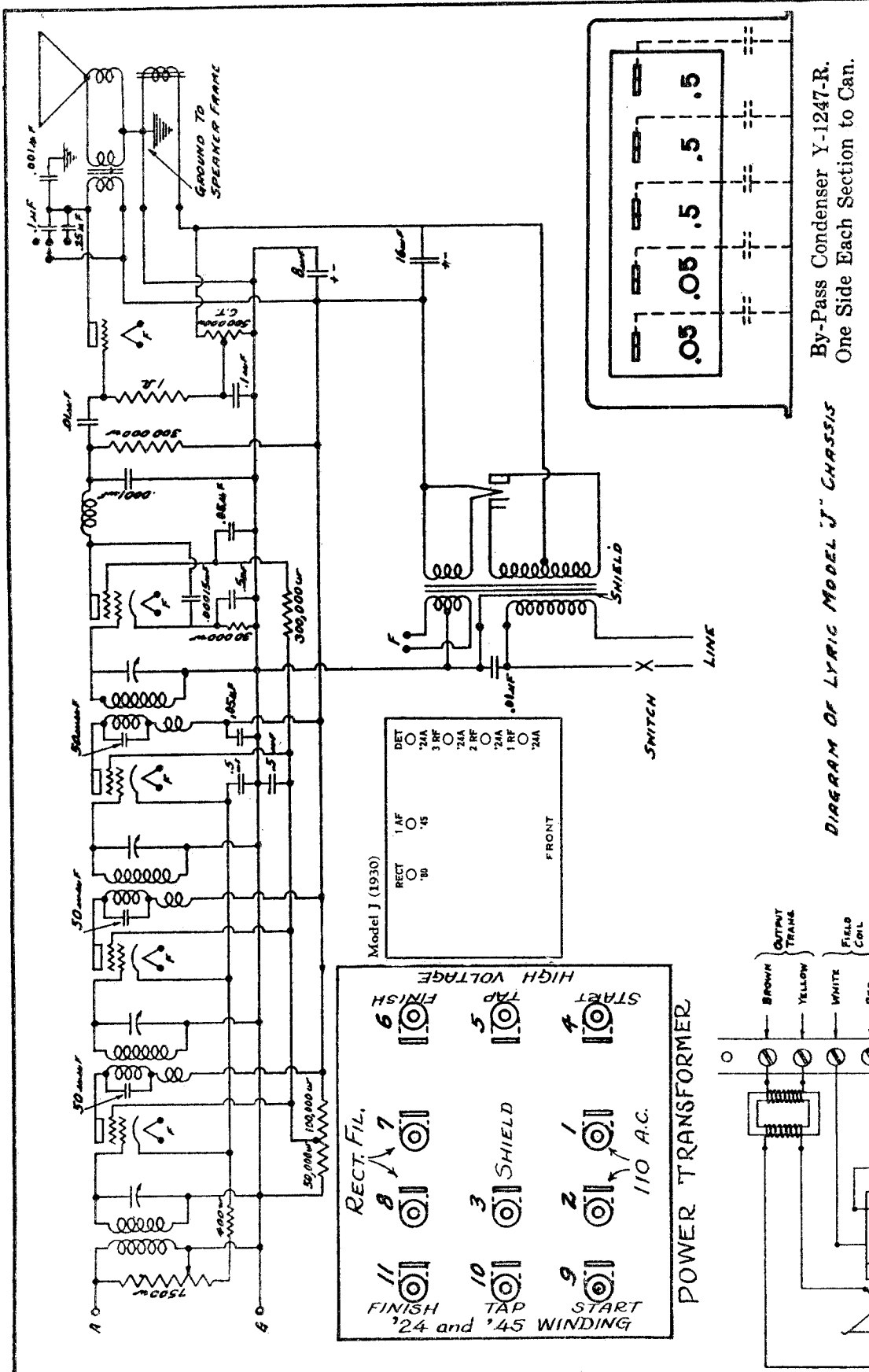
Tube	Position	Filament Voltage	Cathode Voltage	Screen Voltage	Grid Voltage
1 RF	2.5	3	140	90	
2 RF	2.5	3	140	90	
3 RF	2.5	4	140	90	
DET.	2.5	5	50	35	
1 AF	2.5	10	130		
PP	2.45	300			50

RESISTOR VALUES AND COLOR CODING

Resistance Color Coding
 1 megohm Black with red end
 300,000 ohms Orange with green end
 30,000 ohms White
 10,000 ohms Blue
 380 ohms Blue with black end

MODEL "J"
Schematic

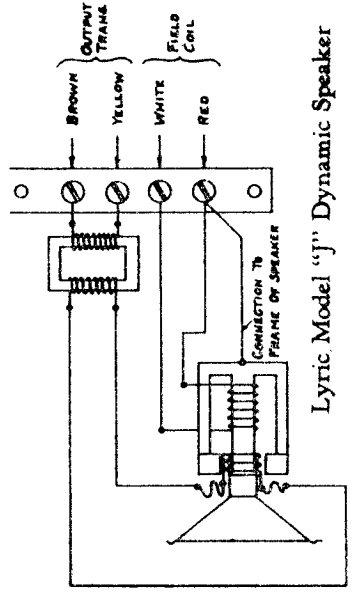
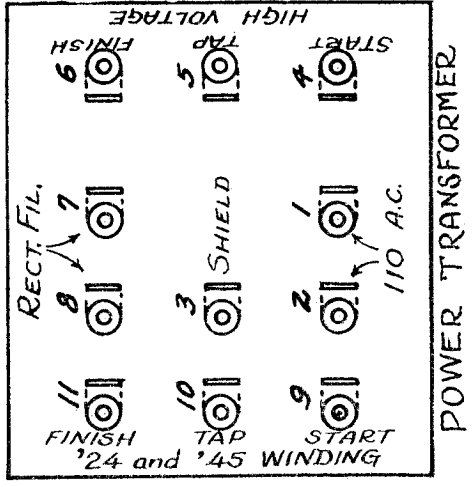
ALL-AMERICAN MOHAWK CORP.



By-Pass Condenser Y-1247-R.
One Side Each Section to Can.

DIAGRAM OF LYRIC MODEL 'J' CHASSIS

Model 'J' Chassis



Lyric Model 'J' Dynamic Speaker

ALL-AMERICAN MOHAWK CORP.

MODEL "J"
Data

Model "J" Chassis

TECHNICAL DATA

The following table shows normal voltages to be found on the LYRIC A. C. Model "J" receiver:

Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
'24	1 RF	2.25	2.5	250	70	
'24	2 RF	2.25	2.5	250	70	
'24	3 RF	2.25	2.5	250	70	
'24	DET	2.25	3.0	180*	60*	
'45	AUD	2.25		250		-50*
'80	RECT	4.8		360 A.C.		

*Due to the high resistance of the circuit, these voltages can only be accurately measured with an electrostatic voltmeter.

The voltages tabulated above are standard under the following conditions:—

1. Line voltage 114.
2. Volume control in full on position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with a 1000 ohm per volt voltmeter.
5. Except where a minus sign precedes the value, the negative side of the instrument is to be connected to the chassis pan.
6. Tested tubes are used.

Slight variation in voltages will be experienced due to manufacturing tolerance on both the parts of the set and the tubes.

RESISTOR VALUES AND COLOR CODING

Each resistance unit in this set has a distinguishing color code to designate its resistance and current handling capacity. It is recommended that when ordering resistors for replacement purposes, they be specified by colors, resistance and their position in the circuit. This will prevent any possibility of errors.

Resistance	Limits	Watts	Color Code
400 ohms (Wire Wound)	390- 410	1	None
30,000 ohms	27,000- 33,000	1	White or Orange-black-orange
150,000 ohms	135,000- 165,000	1	Violet-green-orange or Brown-green-yellow
300,000 ohms	270,000- 330,000	1	Orange-green end or Orange-black-yellow
500,000 ohms	450,000- 550,000	1	Red-green-yellow or Green-black-yellow
1,000,000 ohms	750,000- 1,250,000	1	Black-red end or Brown-black-green

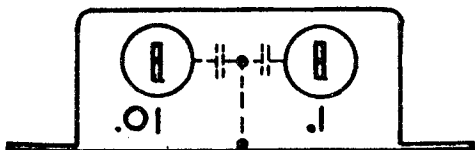
The color coding listed above is in accordance with R. M. A. standards wherever possible. The first color indicates the body, the second the end and the third the band or dot.

FIXED CONDENSER VALUES AND COLOR CODING

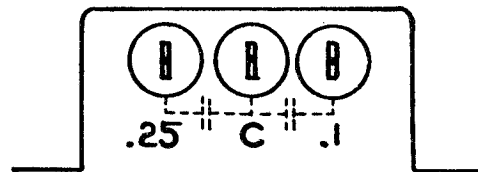
The small condensers in this chassis are color coded and should be ordered the same way as resistors.

Capacitance	Limits	Color Code
.00005 mfd.	.000045-.000055	Grey Dot
.0001	.00009 -.00011	Purple Dot
.00015	.000135-.000165	Yellow Dot
.001	.0009 -.0011	Blue Dot
.01	.009 -.011	None

Diagrams show the connections of the various tone control and by-pass condenser blocks. The electrolytic condensers may be distinguished by the diameters of their cans. The 16 mfd. unit is in a 2½" container while the 8 mfd. unit is in a 1¾" container.



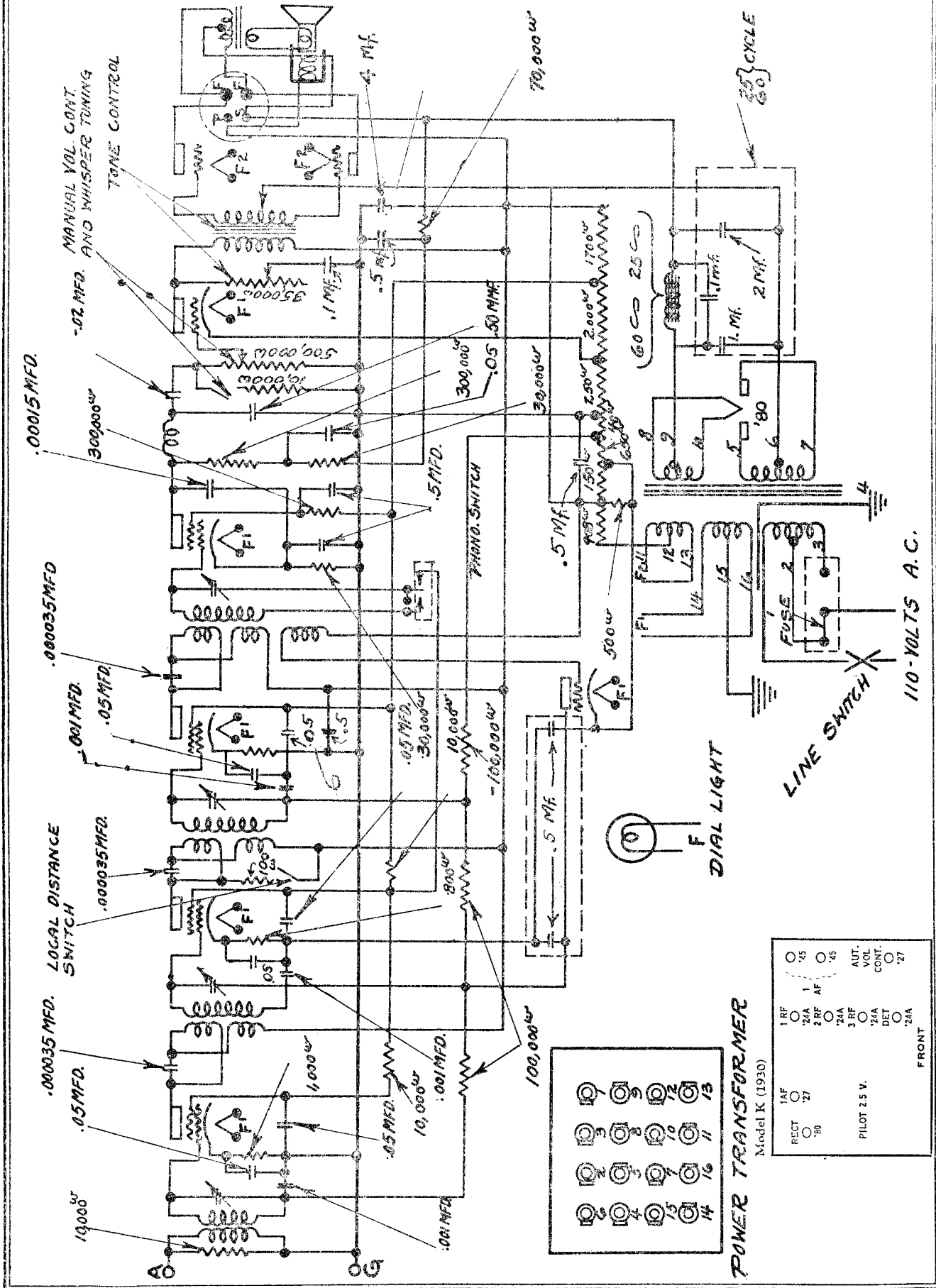
Aux. By-Pass Condenser Y-1276-R.
One Side Each Section to Can.



Tone Control Condenser Y-1279-R.
One Side Each Section to Central Lug.

MODEL "K"

ALL-AMERICAN MOHAWK CORP.



POWER TRANSFORMER
Model K (1930)

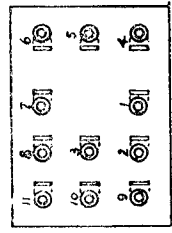
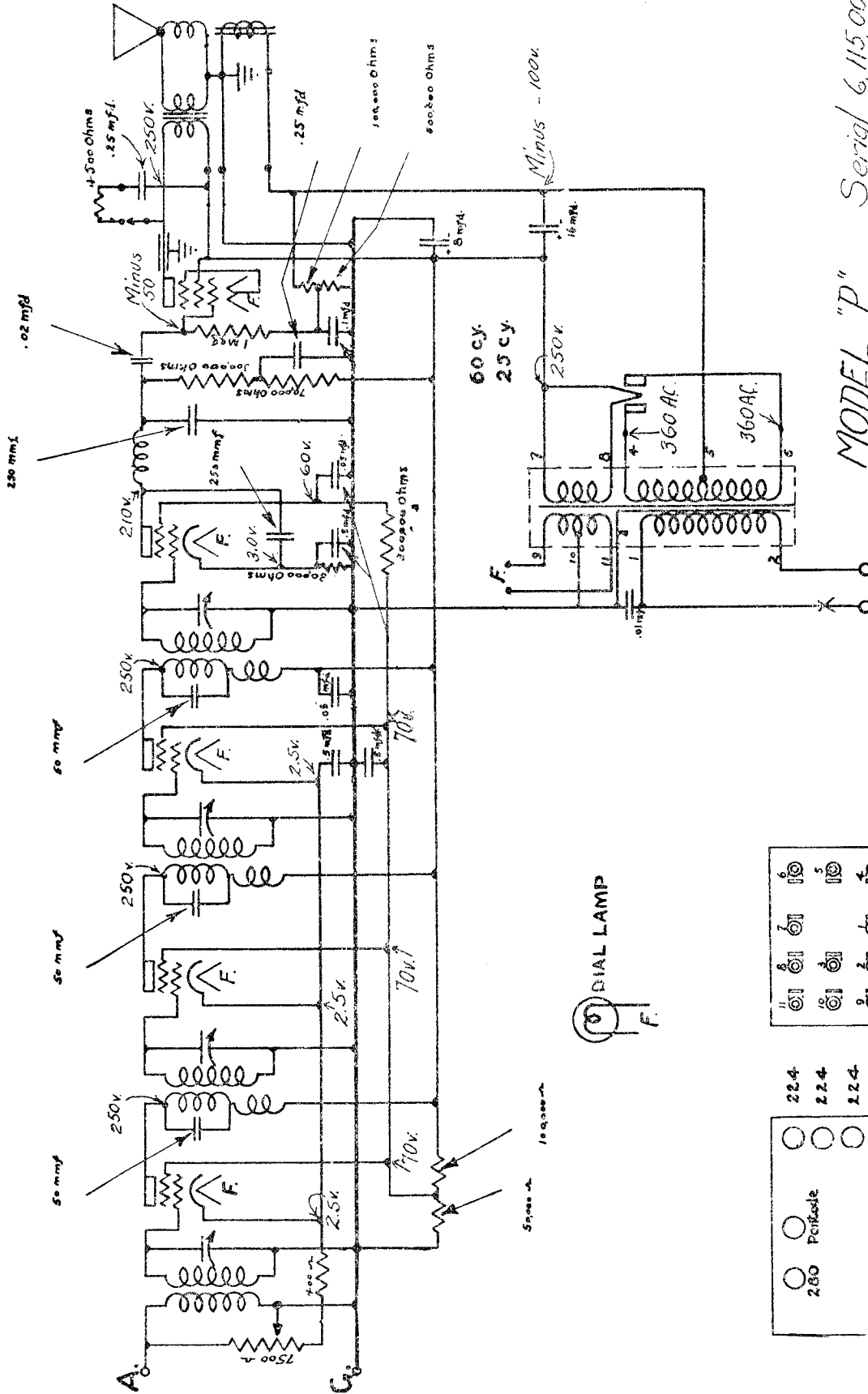
1 AF	'85	1	'85		AUT. VOL. CONT.	'27
2 RF	'24A	AF	'80			
3 RF	'24A					
	'24A					
	'24A	DET				
	'24A					

PILOT 2.5 V.
FRONT

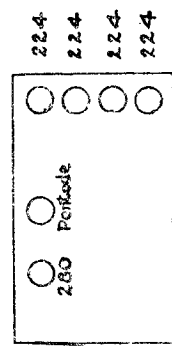
ALL-AMERICAN MOHAWK CORP.

MODEL "P"

Serial 6,115,001-up



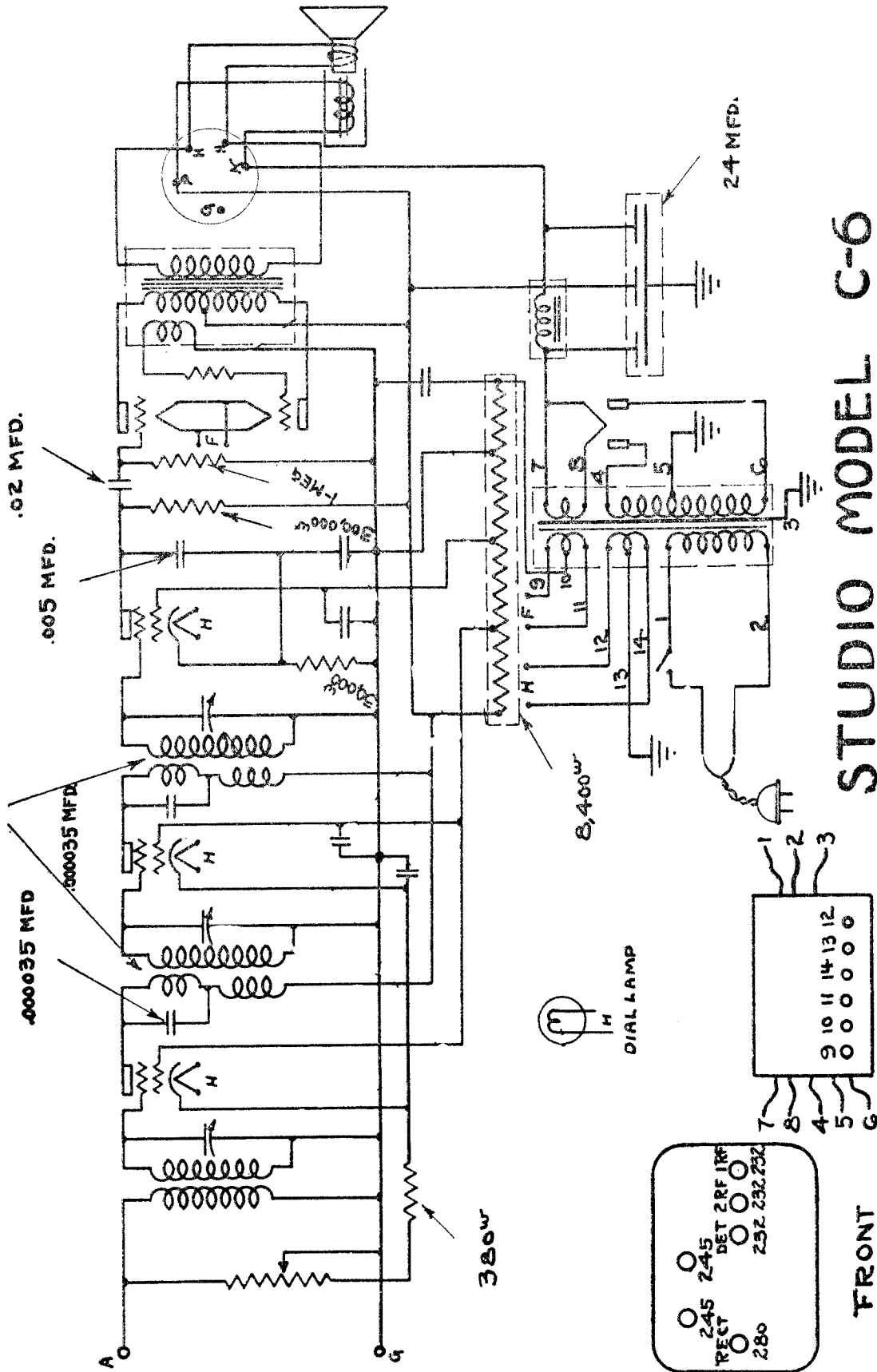
POWER TRANSFORMER



FRONT

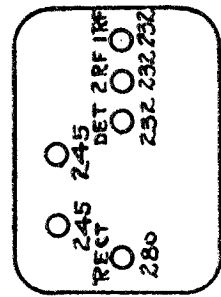
MODEL Schematic C-6

ALL-AMERICAN MOHAWK CORP.



STUDIO MODEL C-6

POWER TRANSFORMER

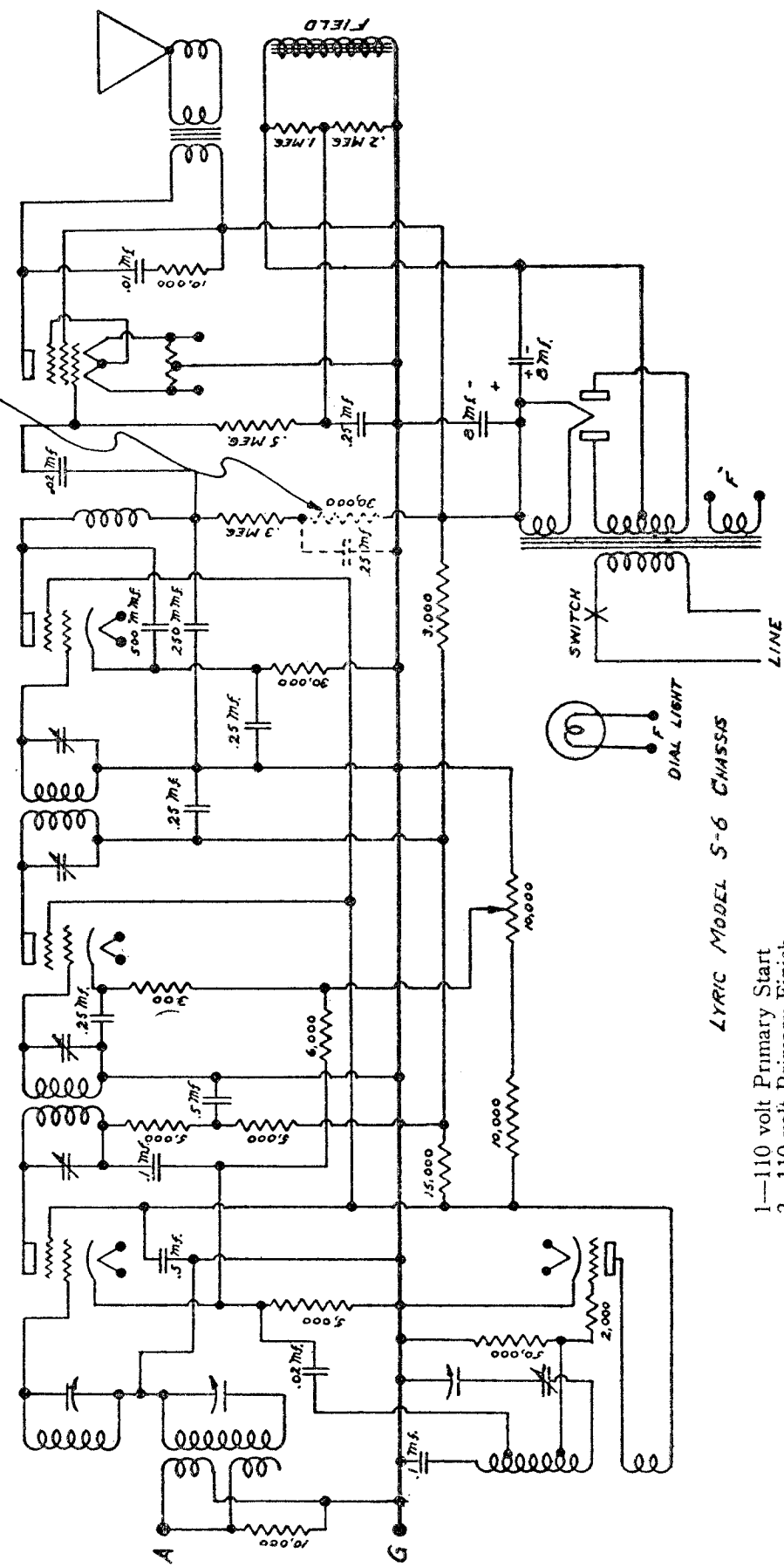


FRONT

ALL-AMERICAN MOHAWK CORP.

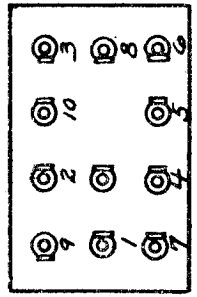
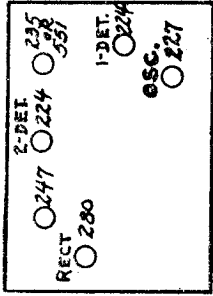
MODEL S-6
Chassis

DOTTED LINES REPRESENT
CHANGE IN EFFECT AFTER
SERIAL NUMBER 1,402,550



LYRIC MODEL S-6 CHASSIS

- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater Winding Start
- 10—Heater Winding Finish
- 11—No Connection



POWER TRANSFORMER

FRONT

MODEL S-6

Data

ALL-AMERICAN MOHAWK CORP.

Model S-6

Resistors:

TECHNICAL DATA

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code.

Resistance	Color	Capacity	Tolerance	Part No.
300 ohms	Orange-black-brown	1/3 watt	10%	14-1773
2,000 ohms	Red-black-red	1/3 watt	10%	14-1806
3,000 ohms	Orange-black-red	1 watt	10%	14-1498
5,000 ohms	Green-black-red	1/3 watt	10%	14-1600
6,000 ohms	Blue-black-red	1/3 watt	10%	14-1502
10,000 ohms	Brown-black-orange	1/3 watt	10%	14-1599
15,000 ohms	Brown-green-orange	3 watt	10%	14-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	14-1555
50,000 ohms	Green-black-orange	1/3 watt	10%	14-1544
100,000 ohms	Brown-black-yellow	1/3 watt	10%	14-1541
200,000 ohms	Red-black-yellow	1/3 watt	10%	14-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	14-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	14-1531

One-third watt resistors are approximately 3/4" long x 1/4" diameter.

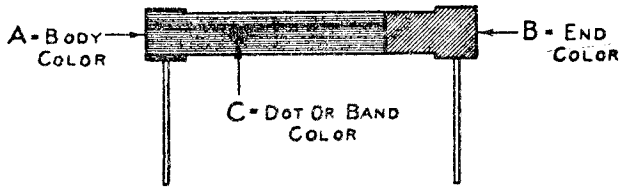
One watt resistors are approximately 1 1/4" long x 1/4" diameter.

Three watt resistors are approximately 1 3/4" long x 3/8" diameter.

RESISTOR COLOR CODE

All resistors on LYRIC Model "S" receivers have their resistance value indicated by the RMA Color Code which is described below.

C—Dot or band color denotes number of zeros following second significant figure.



0—Black	5—Green
1—Brown	6—Blue
2—Red	7—Violet
3—Orange	8—Grey
4—Yellow	9—White

A few samples of this code are given below.

Body Color	End Color	Dot Color	Resistance
Orange	Black	Yellow	300,000 ohms
Brown	Green	Orange	15,000 ohms
Violet	Green	Red	7,500 ohms
Orange	Black	Brown	300 ohms

A—Body color denotes first significant figure.

B—End color denotes second significant figure.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity.

Capacity	Color	Tolerance	Part Number
.0005 Mfd.	Green, Black, Brown	10%	14-1186

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below:

Voltage	Color
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Normal Working Voltages:

- Line voltage 115 volts.
- Volume control in full "ON" position.
- Antenna disconnected so that no signal is received.
- Measurements made with 1000 ohm per volt meter.
- Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
- Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
1st Det.	-24	2.5	4.2	185	70	0
Oscillator	-27	2.5	0	70	0	0
I.F. Amp.	-51 or -35	2.5	1.8	195	70	0
2nd Det.	-24	2.5	4.5	195**	70	0
Output	-47	2.5		225	245 (note)	-17**

Speaker Field Current—49 M.A.

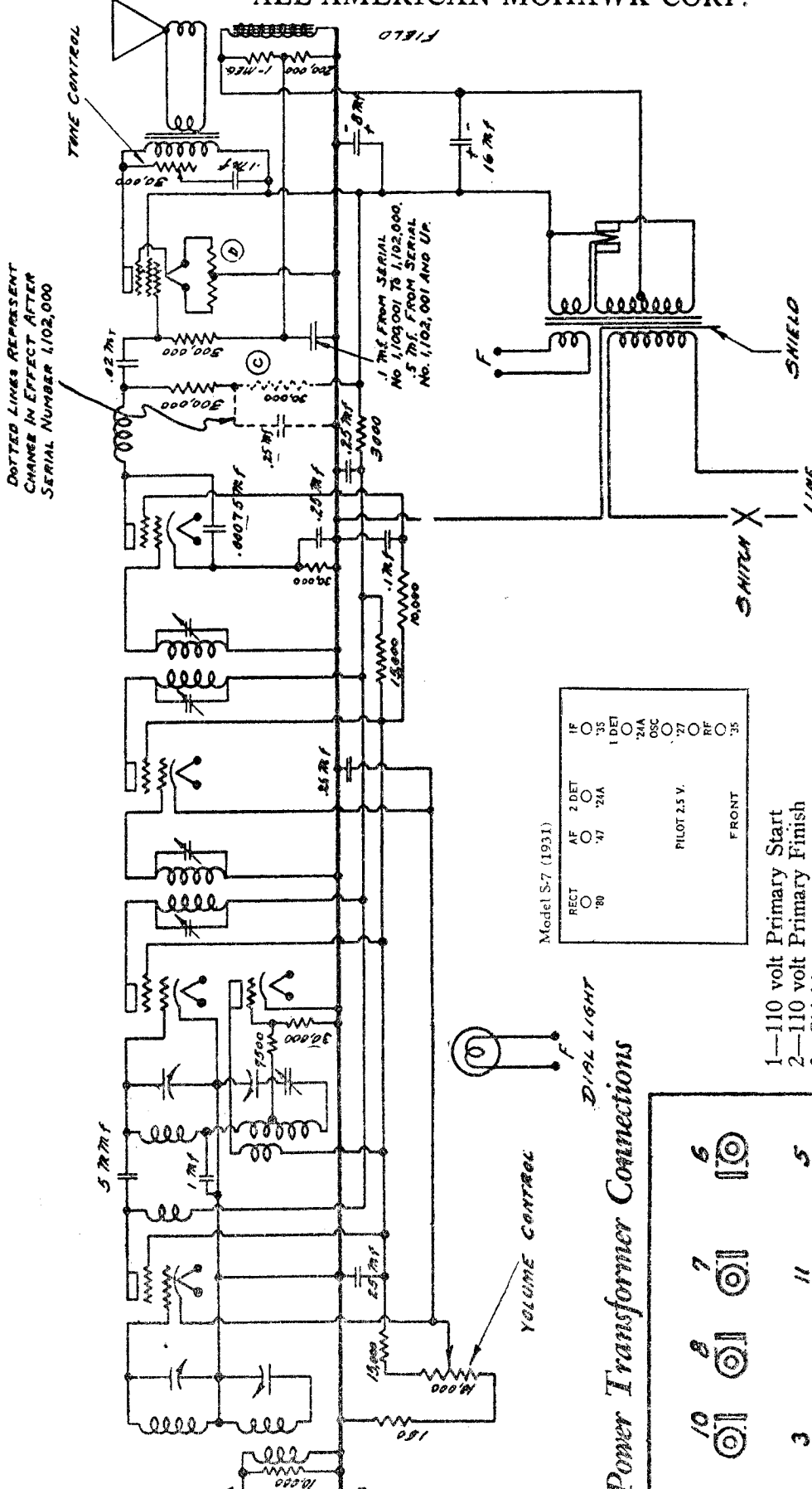
Note—Screen of pentode is connected to cathode pin on socket.

** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

MODEL S-7

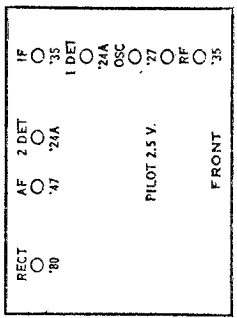
ALL-AMERICAN MOHAWK CORP.

PEAK FREQUENCY = 175 KC.

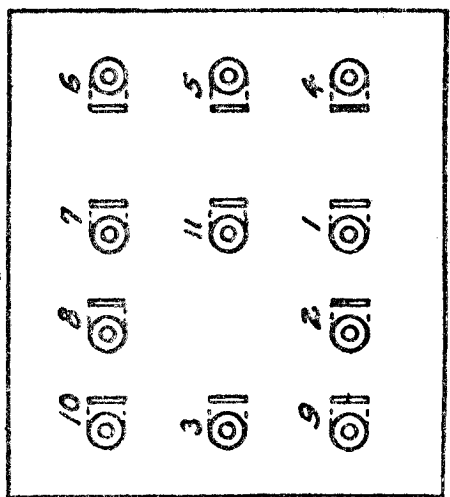


Model S-7 Receiver

Model S-7 (1931)



Power Transformer Connections



- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater and '47 Filament Winding Start
- 10—Heater and '47 Filament Winding Finish
- 11—No Connection

MODEL S-7

Data

ALL-AMERICAN MOHAWK CORP.

Model S-7

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	Color	Capacity	Tolerance	Part No.
150 ohms	Brown-green-brown	1/3 watt	10%	11-1760 or 11-1603
3,000 ohms	Orange-black-red	2 watt	10%	11-1759
4,500 ohms	Yellow-green-red	1/3 watt	10%	11-1542
7,500 ohms	Violet-green-red	1/3 watt	10%	11-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	11-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	11-1601
15,000 ohms	Brown-green-orange	2 watt	10%	11-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	11-1555
200,000 ohms	Red-black-yellow	1/3 watt	10%	11-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	11-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	11-1531

One-third watt resistors are approximately 3/4" long by 3/8" in diameter.

One watt resistors are approximately 1 1/4" long by 1/4" in diameter.

Two watt resistors are approximately 1 3/4" long by 3/8" in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part number are listed.

Capacity	Color	Tolerance	Part Number
.00075 Mfd.	Violet, Green, Brown	10%	11-1801
5 m. mfd.	Black, Green, Black	10%	11-1595

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	Color
200	Green dot or label
400	Red dot or label
500	Yellow dot or label

Normal Working Voltages:

1. Line voltage 115 volts.
2. Volume control in full "ON" position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with 1000 ohm per volt meter.
5. Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
6. Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
R.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
1st Det.	-24	2.50 A. C.		195.0	70.0	0
Oscillator	-27	2.50 A. C.	0	70.0		0
I.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
2nd. Det.	-24	2.50 A. C.	4.50	168.0 **	70.0	0
Output	-47	2.50 A. C.		230.0	250.0 (note)	-17.0**
Rectifier	-80	5.00 A. C.		350.0 A. C.		

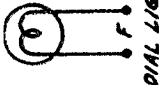
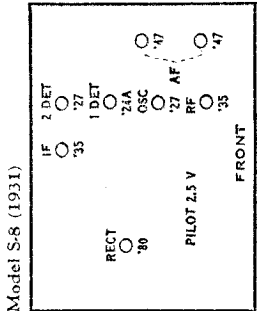
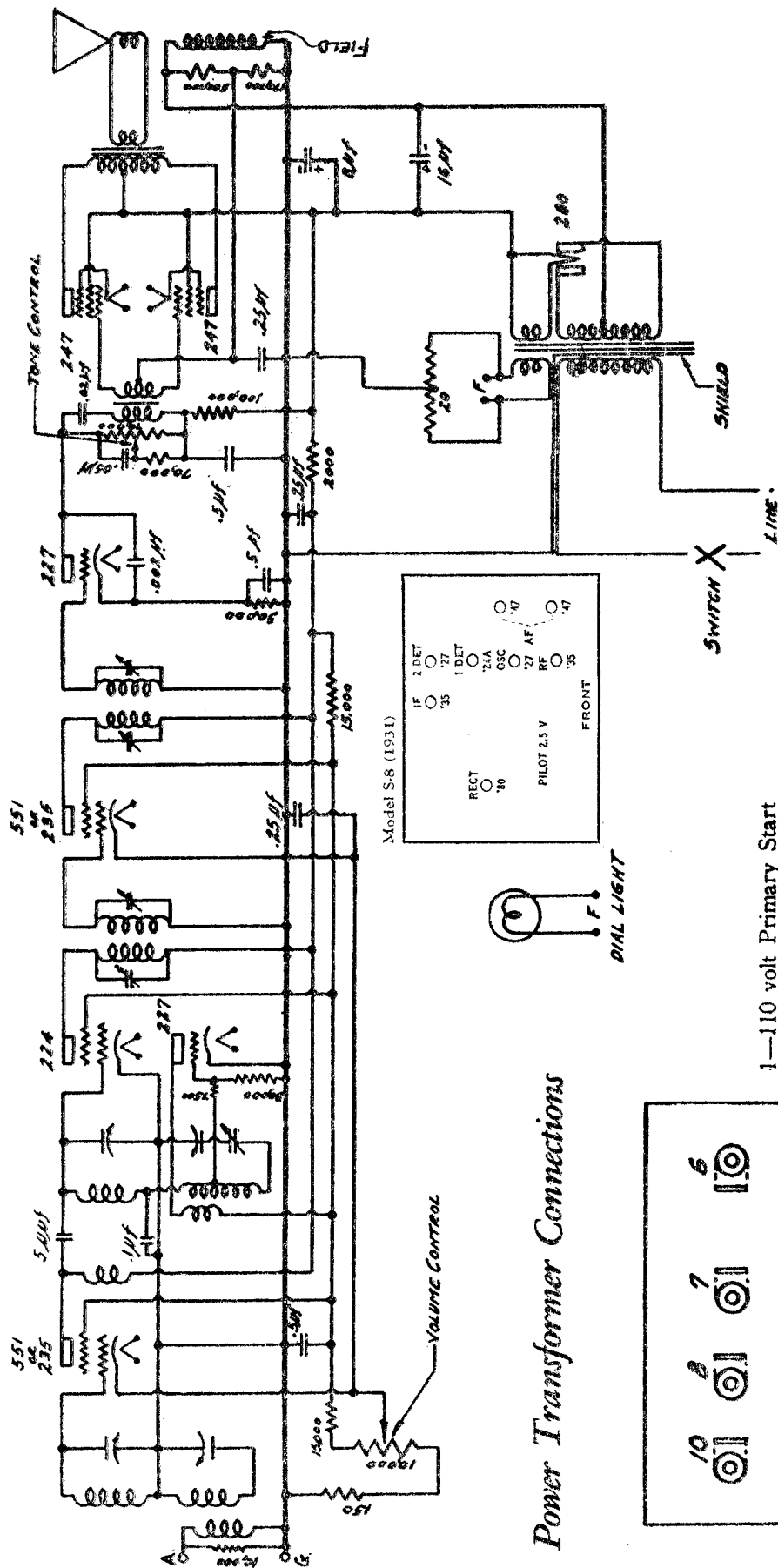
Speaker field current—57 M. A.

** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.
 Note—Screen of pentode is connected to cathode pin on socket.

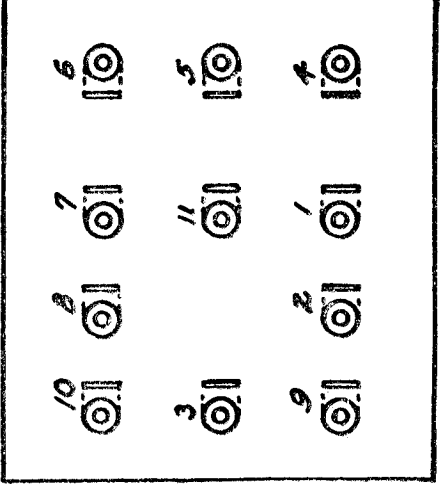
ALL-AMERICAN MOHAWK CORP.

MODEL S-8

PEAK FREQUENCY = 176 KC.



Power Transformer Connections



- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater and '47 Filament Winding Start
- 10—Heater and '47 Filament Winding Finish
- 11—No Connection

Model S-8 Receiver

MODEL S-8
Data

ALL-AMERICAN MOHAWK CORP

Model S-8

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	Color	Capacity	Tolerance	Part No.
150 ohms	Brown-green-brown	1/3 watt	10%	12-1603 or 12-1760
2,000 ohms	Red-black-red	3 watt	10%	12-1777
7,500 ohms	Violet-black-red	1/3 watt	10%	12-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	12-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	12-1601
15,000 ohms	Brown-green-orange	3 watt	10%	12-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	12-1555
70,000 ohms	Violet-black-orange	1/3 watt	10%	12-1558
100,000 ohms	Brown-black-yellow	1/3 watt	10%	12-1614
170,000 ohms	Brown-violet-yellow	1/3 watt	10%	12-1734
500,000 ohms	Green-black-yellow	1/3 watt	10%	12-1531

One-third watt resistors are approximately $\frac{3}{4}$ " long by $\frac{1}{4}$ " in diameter.

One watt resistors are approximately $1\frac{3}{4}$ " long by $\frac{1}{4}$ " diameter.

Three watt resistors are approximately $1\frac{1}{4}$ " long by $\frac{3}{8}$ " in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part numbers are listed.

Capacity	Color	Tolerance	Part Number
5 m. mfd.	Black, Green, Black	10%	12-1595
.002	Red, Black, Red	10%	12-1625

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	Color
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Part numbers for these units are given on the schematic diagram at the end of the manual.

Normal Working Voltages:

- Line voltage 115 volts.
- Volume control in full "On" position.
- Antenna disconnected so that no signal is received.
- Measurements made with 1000 ohm per volt meter.
- Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
- Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
R.F. Amp.,	-51 or -35	2.5 A. C.	2.1	200	70	0
1st Det.	-24	2.5 A. C.		205	70	0
Oscillator	-27	2.5 A. C.	0	70		0
I.F. Amp.	-51 or -35	2.5 A. C.	2.1	200	70	0
2nd Det.	-24	2.5 A. C.	10	125		0
Output	-47	2.5 A. C.		235	250 (note)	-17.0**

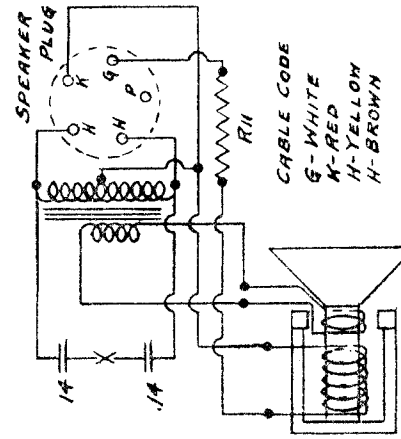
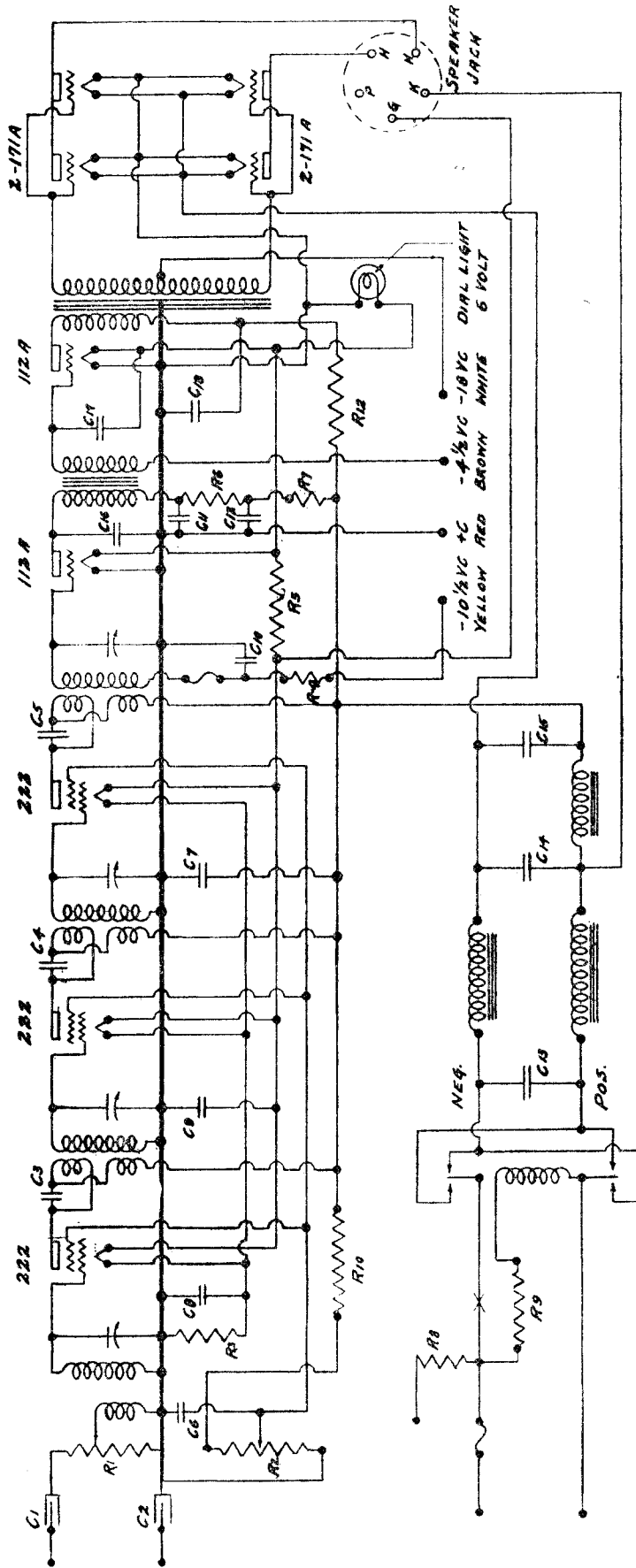
Speaker field current—91 M.A.

Note—Screen of pentode is connected to cathode pin on socket.

**Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

ALL-AMERICAN MOHAWK CORP

MODEL - DC

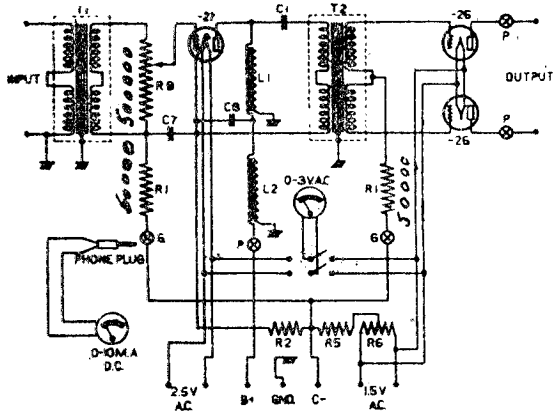
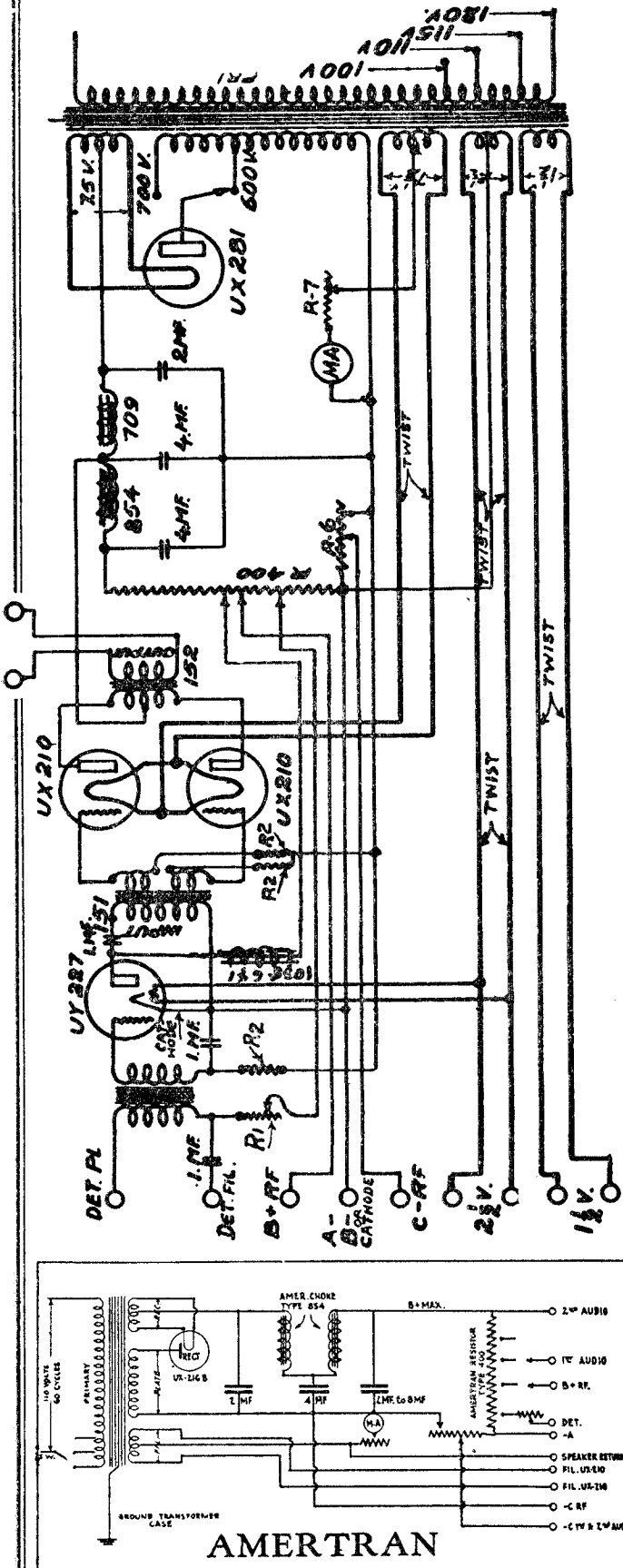


- CABLE CODE
G-WHITE
K-RED
H-YELLOW
H-BROWN
- ①
- 10000 W VOLUME CONTROL
7500 W WIRE WOUND
8.6 W WIRE WOUND
10000 W CARBON
2.25 W WIRE WOUND
4500 W CARBON
4500 W CARBON
10 W VITREOUS ENAMELLED (IN CHASSIS)
700 W CARBON
4500 W CARBON
85 W VITREOUS ENAMELLED (ON SPEAKER)
2400 W CARBON

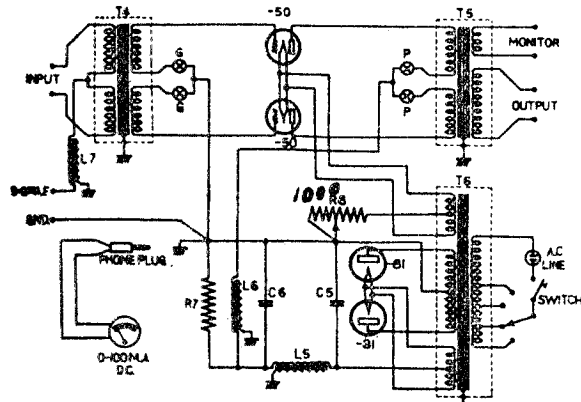
- ②
- C1 .02 μF
C2 .05 μF
C3 .35 μF
C4 .35 μF
C5 .35 μF
C6 .5 μF
C7 .5 μF
C8 .05 μF
C9 .1 μF (2.05 μ IN PARALLEL)
C10 .1 μF (2.5 μ IN PARALLEL)
C11 .5 μF
C12 1.0 μF
C13 8 μF (ELECTROLYTIC)
C14 8 μF (ELECTROLYTIC)
C15 .001 μF
C16 .00025 μF
C17 .5 μF
C18 .5 μF

SCHEMATIC DIAGRAM - DC CHASSIS 11-4-39

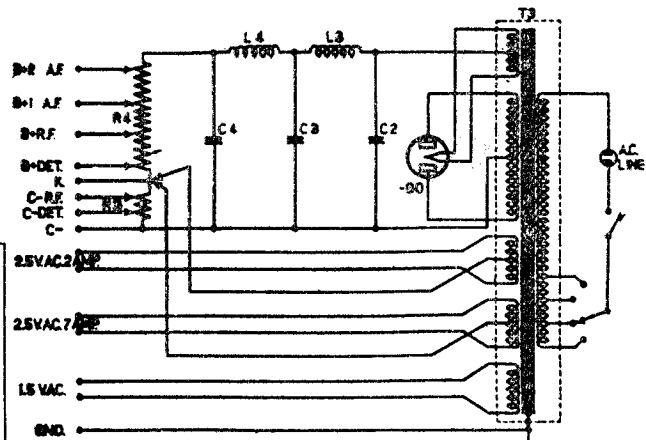
AMERICAN TRANSFORMER CO. MODEL 25-A Amp'ier



25-A Power Amplifier (A Unit)



25-A Power Amplifier (PA Unit)

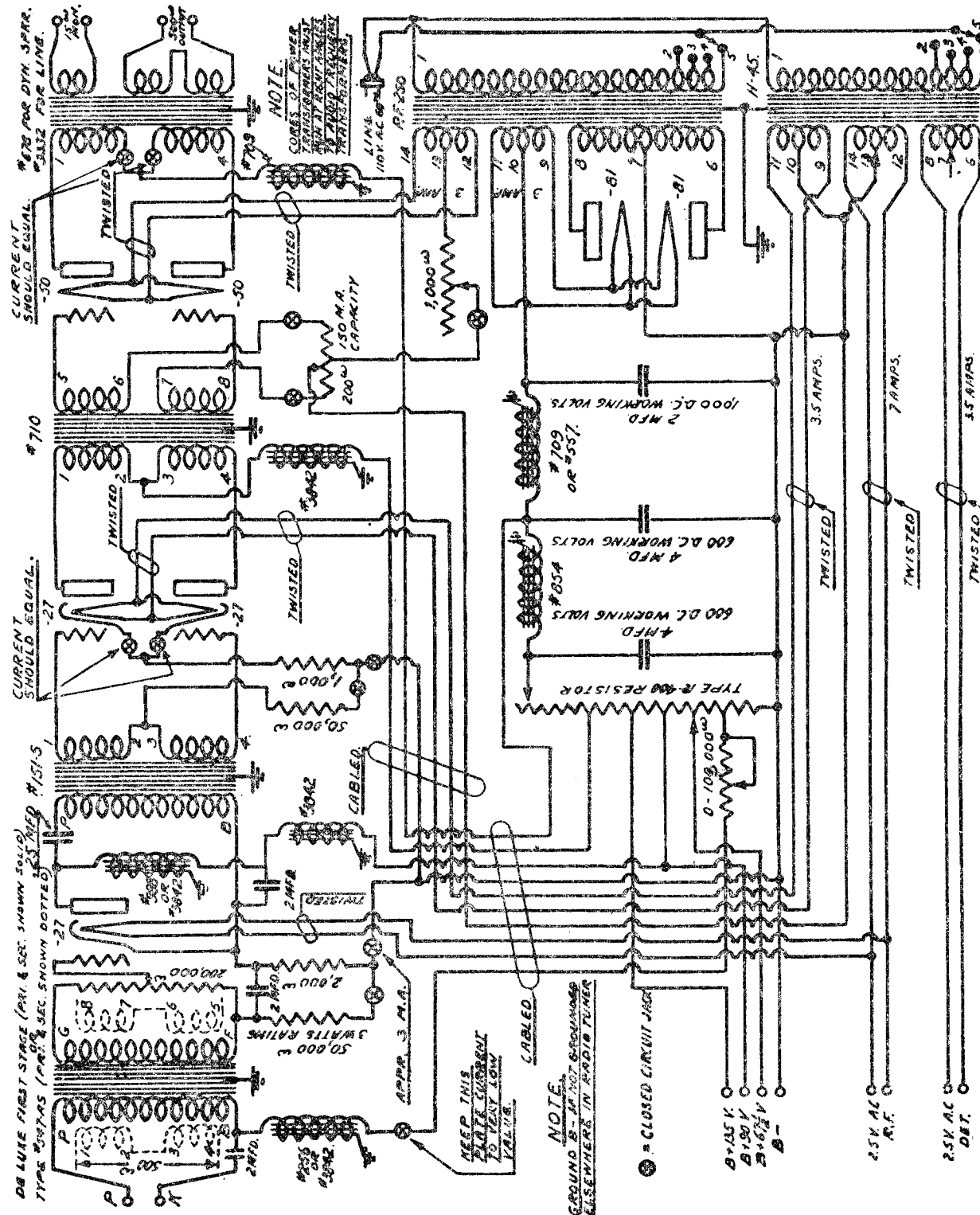


25-A Power Amplifier (P Unit)

AMERTRAN

MODEL 250 Amertran
Power Amplifier

AMERICAN TRANSFORMER CO.



CURRENT SHOULD EQUAL -30

CURRENT SHOULD EQUAL -27

DB LATE FIRST STAGE (PRI. & SEC. SHOWN SOLID) TYPE 6X4PS (PRI. & SEC. SHOWN DOTTED) #151-S

NOTE: CORES OF POWER TRANSFORMERS MUST BE KEPT AT RIGHT ANGLE TO EACH OTHER TO PREVENT INTERFERENCE

KEEP THIS PLATE CURRENT TO VERY LOW VALUE.

NOTE: GROUND B- & B-207 OTHERWISE ELSEWHERE IN RADIO TUNER

⊗ = CLOSED CIRCUIT JACK

- B+125V
- B+150V
- B+50V
- B-

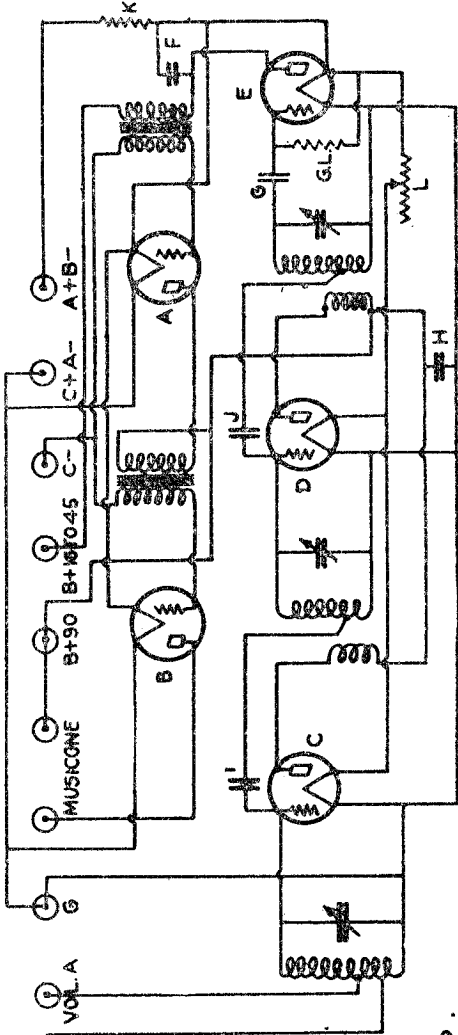
25V AC

25V DC

250 POWER AMPLIFIER

AMRAD CORPORATION

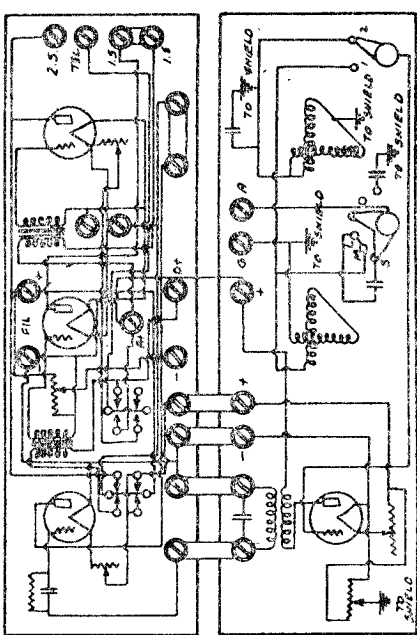
MODEL S-522
 MODEL 3500-1
 MODEL 3500-2



KEY

A	2-Stage Audio Stages
B	2-Stage Audio Stages
C	2-Stage Audio Stages
D	Detector
E	2-Stage Audio Stages
F	Filament Winding
G	Ground
H	Broadcast Tuner
I	2-Stage Audio Stages
J	2-Stage Audio Stages
K	2-Stage Audio Stages

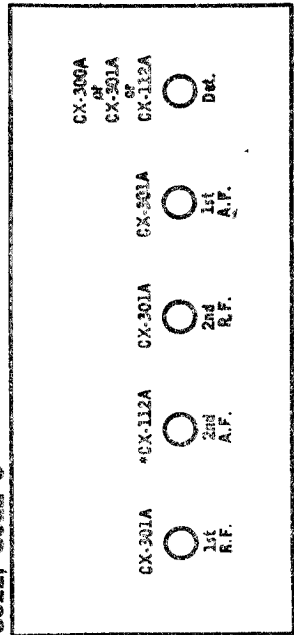
S-522



3500-2

INTERNAL WIRING OF DETECTOR & 2-STAGE AMPLIFIER 3500-2 AND BROADCAST TUNER 3475 AS VIEWED FROM FRONT OF INSTRUMENT

S522, S522-C (Batt.)

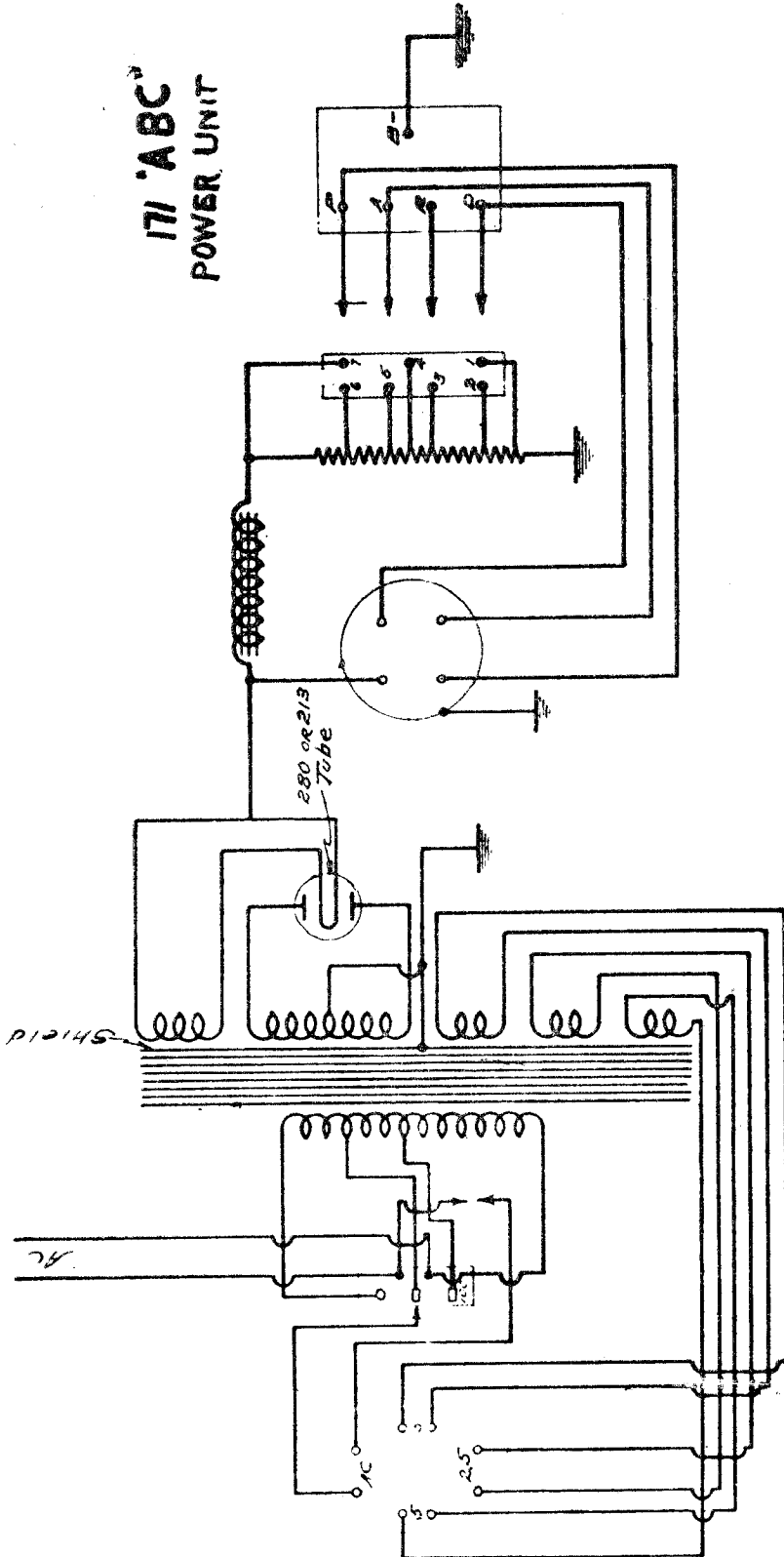


3500-1

INTERNAL WIRING OF DETECTOR & 2-STAGE AMPLIFIER 2634 BROADCAST TUNER 3475 AS VIEWED FROM FRONT OF INSTRUMENT

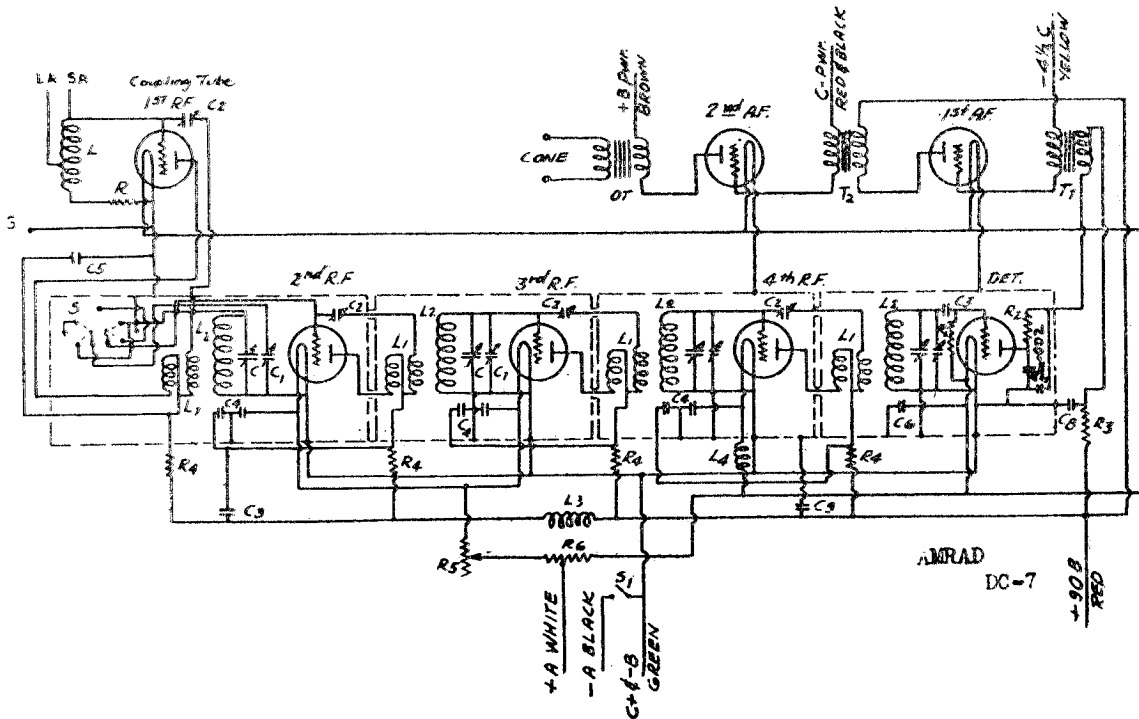
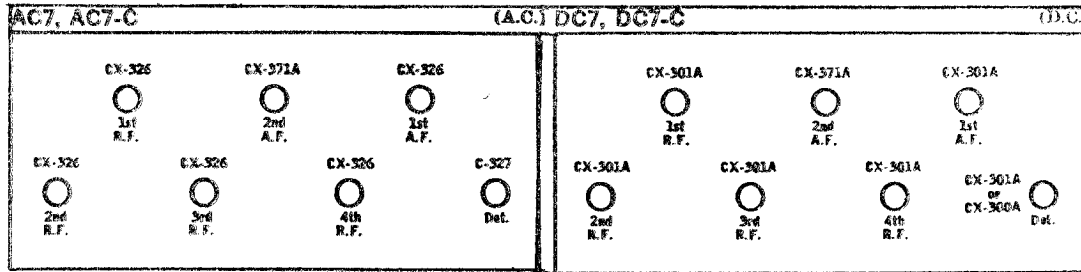
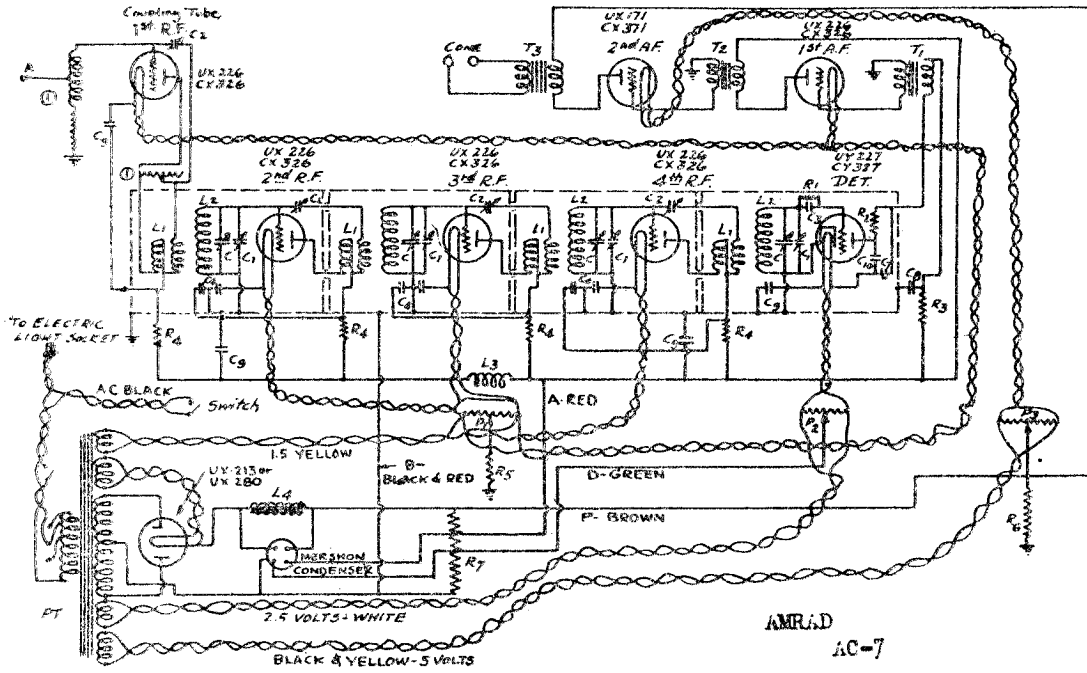
MODEL 171 ABC
Power Pack

AMRAD CORPORATION



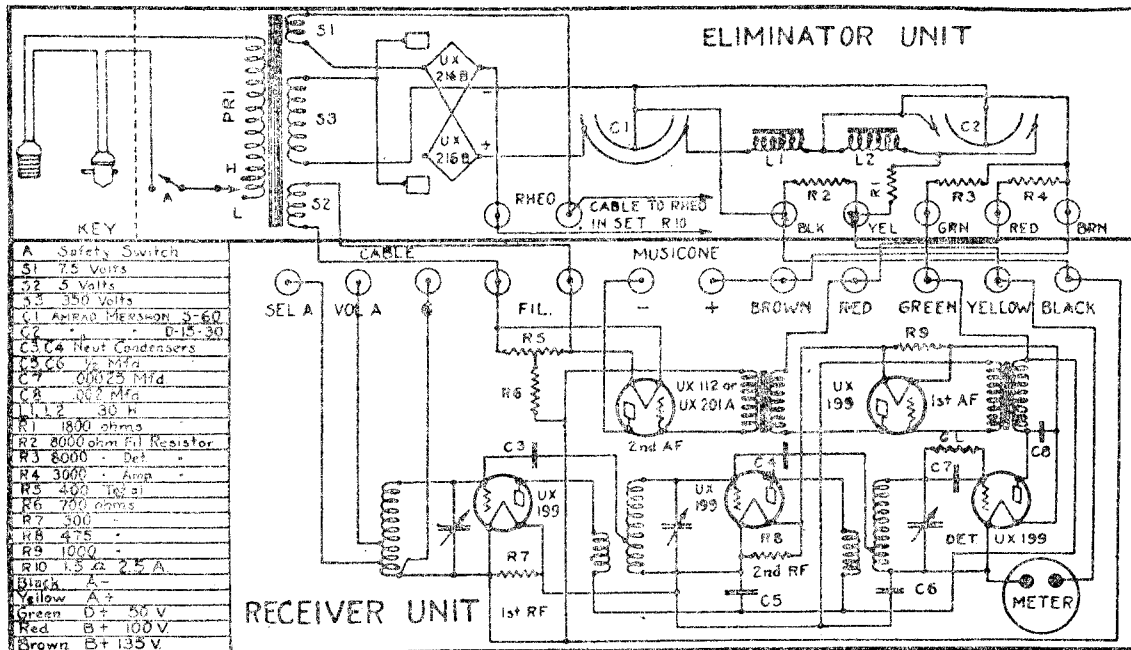
AMRAD CORPORATION

MODEL AC-7
MODEL DC-7



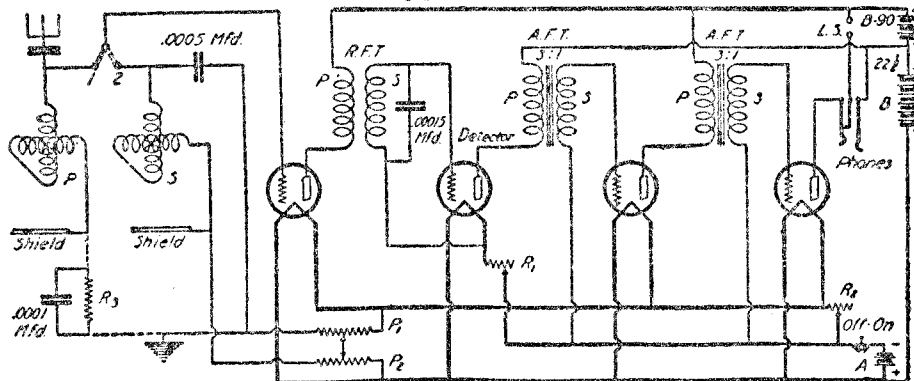
MODEL AC-5
 MODEL 80, 82, 83
 MODEL Inductrol

AMRAD CORPORATION

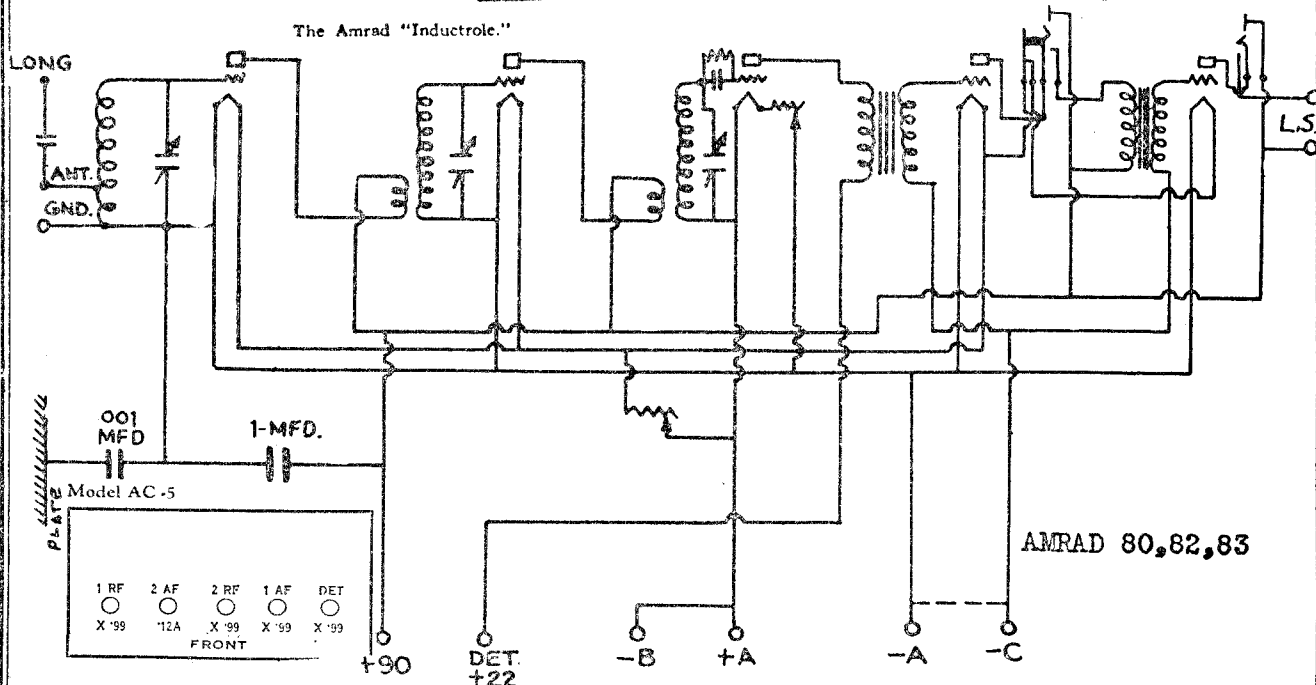


A	Safety Switch
S1	75 Volts
S2	5 Volts
S3	350 Volts
C1	AMRAD MERRISON S1-60
C2	D-15-30
C3, C4	Neut Condensers
C5, C6	15 pfd
C7	0.0025 Mfd
C8	0.001 Mfd
L1, L2	30 H
R1	1800 ohms
R2	8000 ohm Fil Resistor
R3	8000 Det
R4	3000
R5	500 100 oh
R6	700 ohms
R7	500
R8	475
R9	1000
R10	1.5 A 2.5 A
Black	A-
Yellow	A+
Green	D+ 50 V
Red	B+ 100 V
Brown	B+ 135 V

NEUTRODYNE. Type AC-5 and Power Unit.



The Amrad "Inductrol."

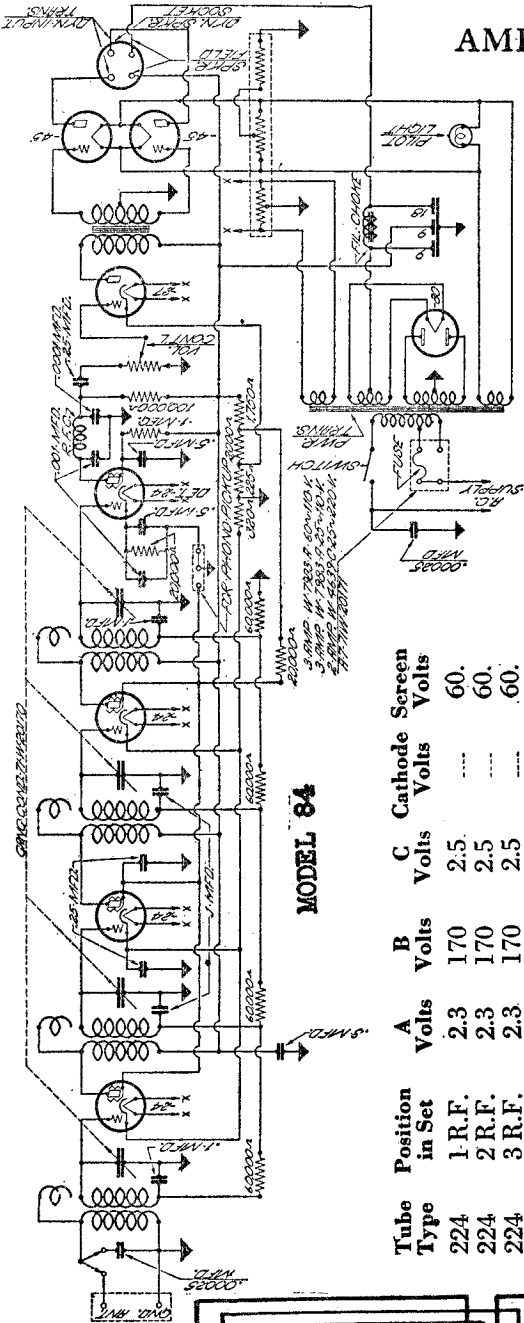


AMRAD 80, 82, 83

1 RF	2 AF	2 RF	1 AF	DET
X '99	12A	X '99	X '99	X '99
FRONT				

AMRAD CORPORATION

MODEL 84
MODEL S-733
MODEL 3950

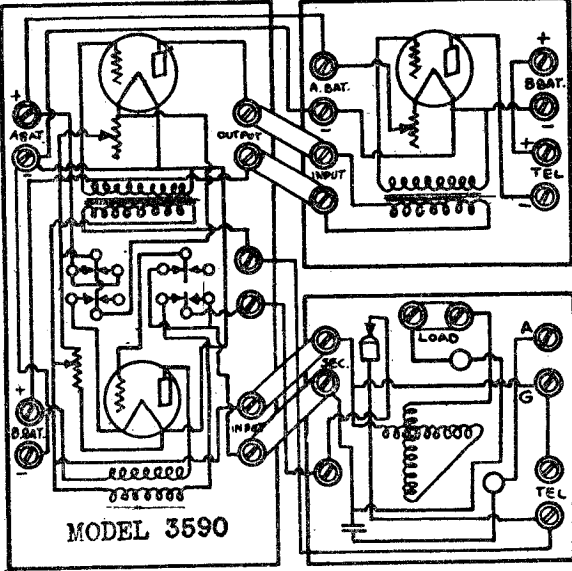
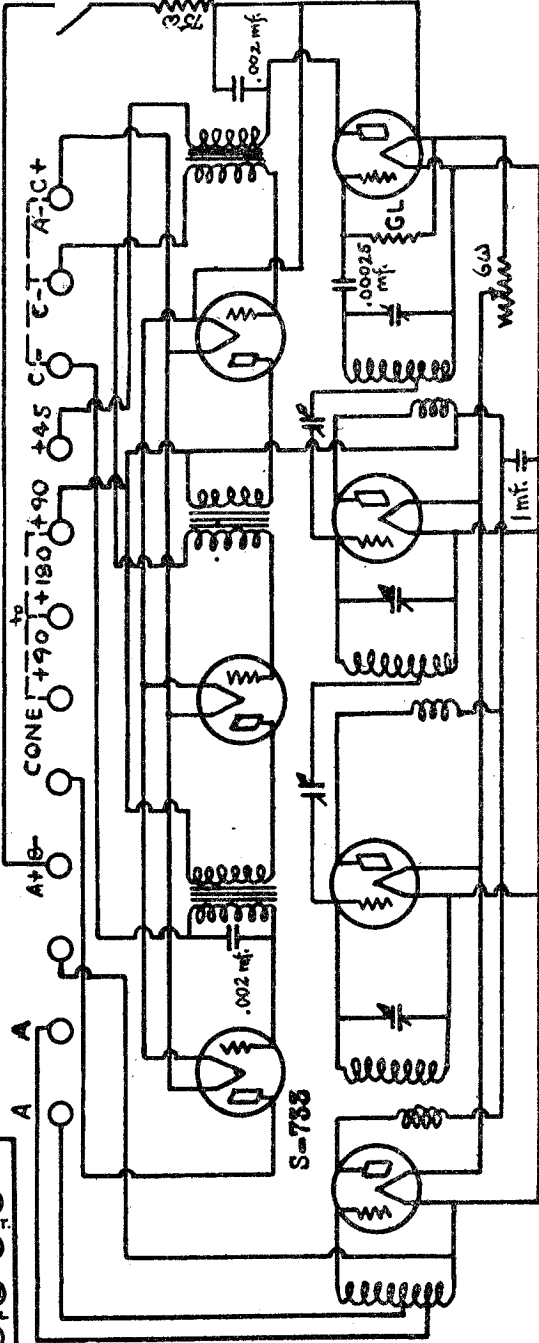


MODEL 84

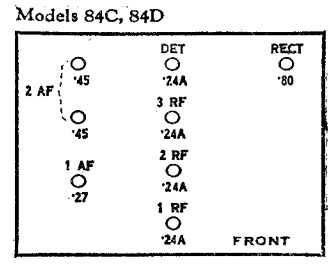
Tube Type	Position in Set	A Volts	B Volts	C Volts	Screen Volts
224	1 R.F.	2.3	170	2.5	60.
224	2 R.F.	2.3	170	2.5	60.
224	3 R.F.	2.3	170	2.5	60.
224	Det.	2.3	95	4.0	35.
227	1 A.F.	2.3	130	8.0	---
245	P.P.	2.3	220	40.	---
245	P.P.	2.3	220	40.	---
280	Rect.	4.6	250	---	---

Line voltage 117. Volume control maximum.

- CX-300A or CX-301A or CX-112A Det.
- CX-301A 1st A.F.
- CX-301A 2nd A.F.
- CX-301A 3rd A.F.
- CX-301A 1st R.F.
- CX-301A 2nd R.F.
- CX-301A 3rd R.F.
- S733

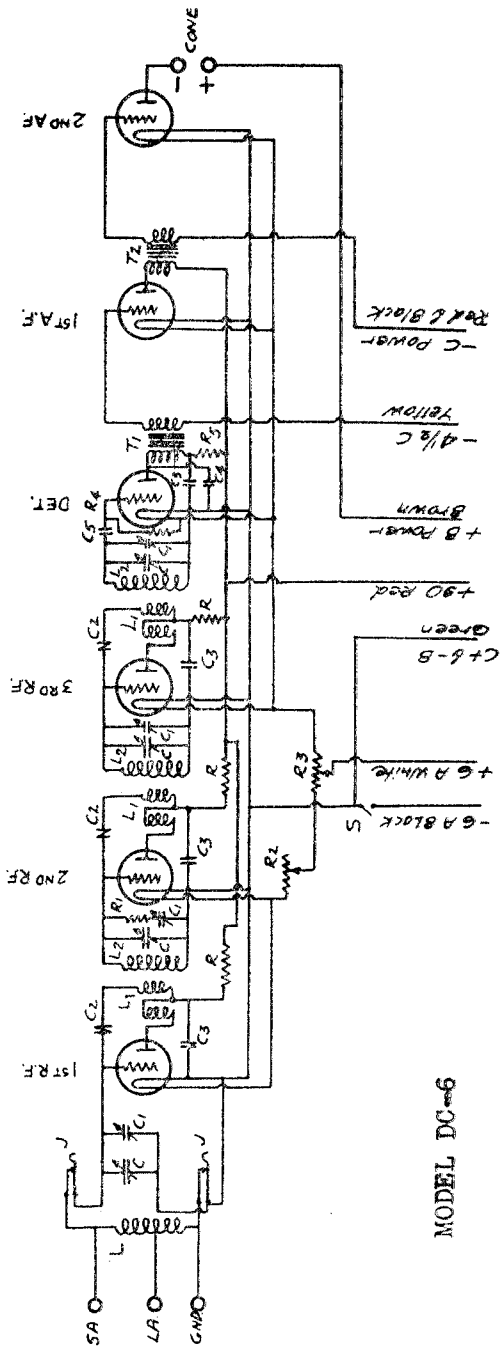


MODEL 3950

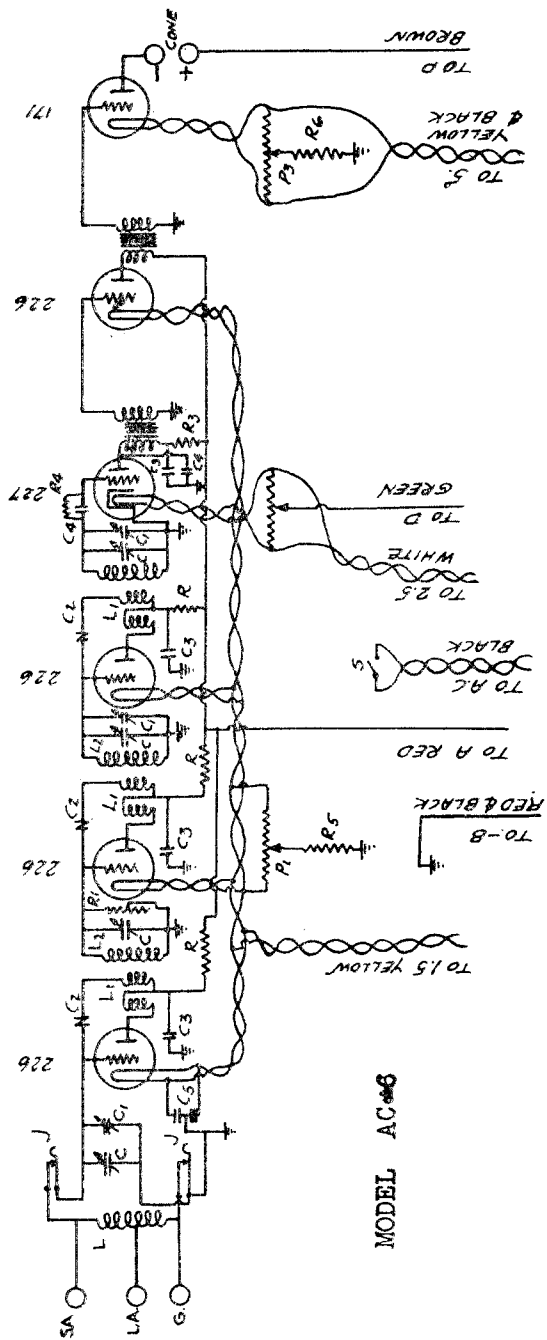


MODEL AC-6
MODEL DC-6

AMRAD CORPORATION

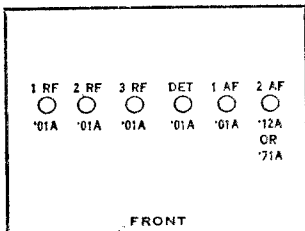


MODEL DC-6

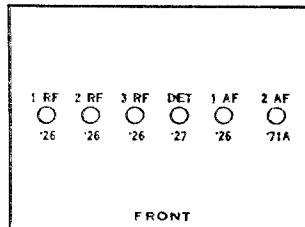


MODEL AC-6

Models DC-6, DC-6C

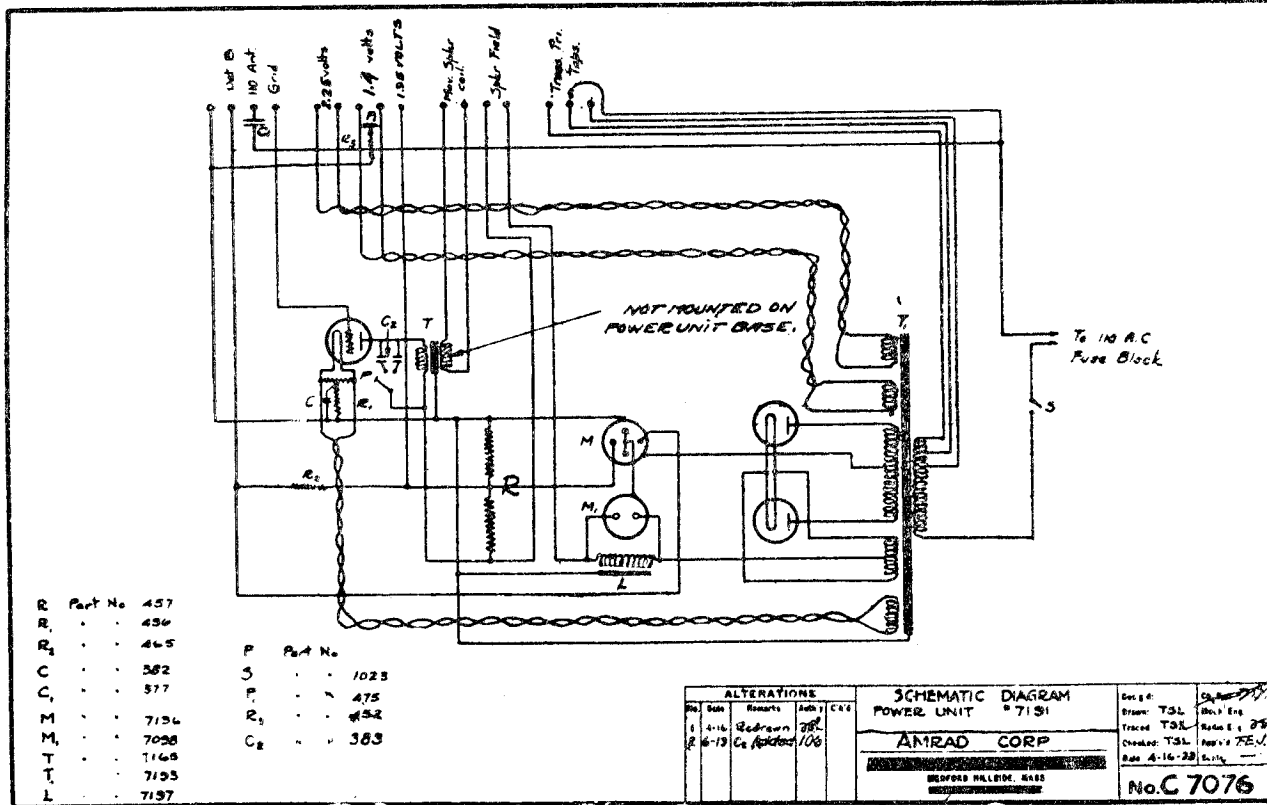
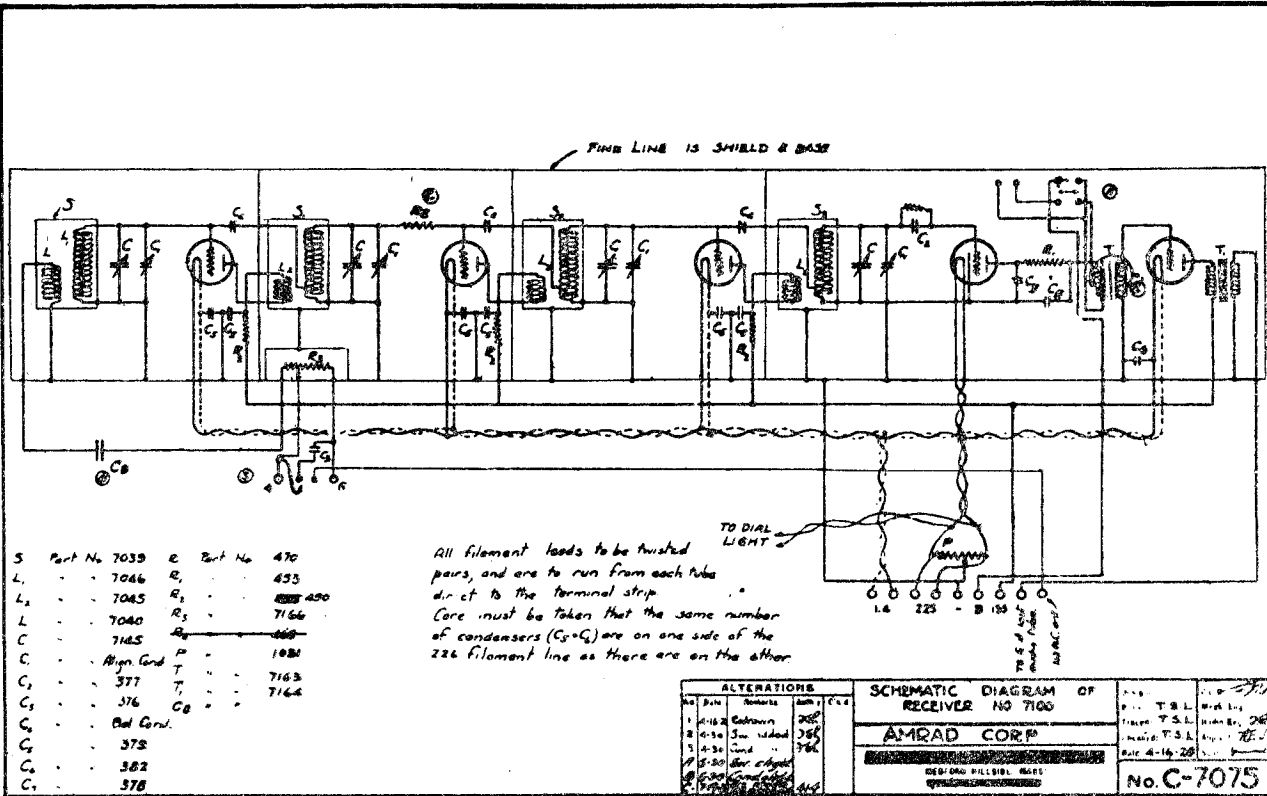


Models AC-6, AC-6C



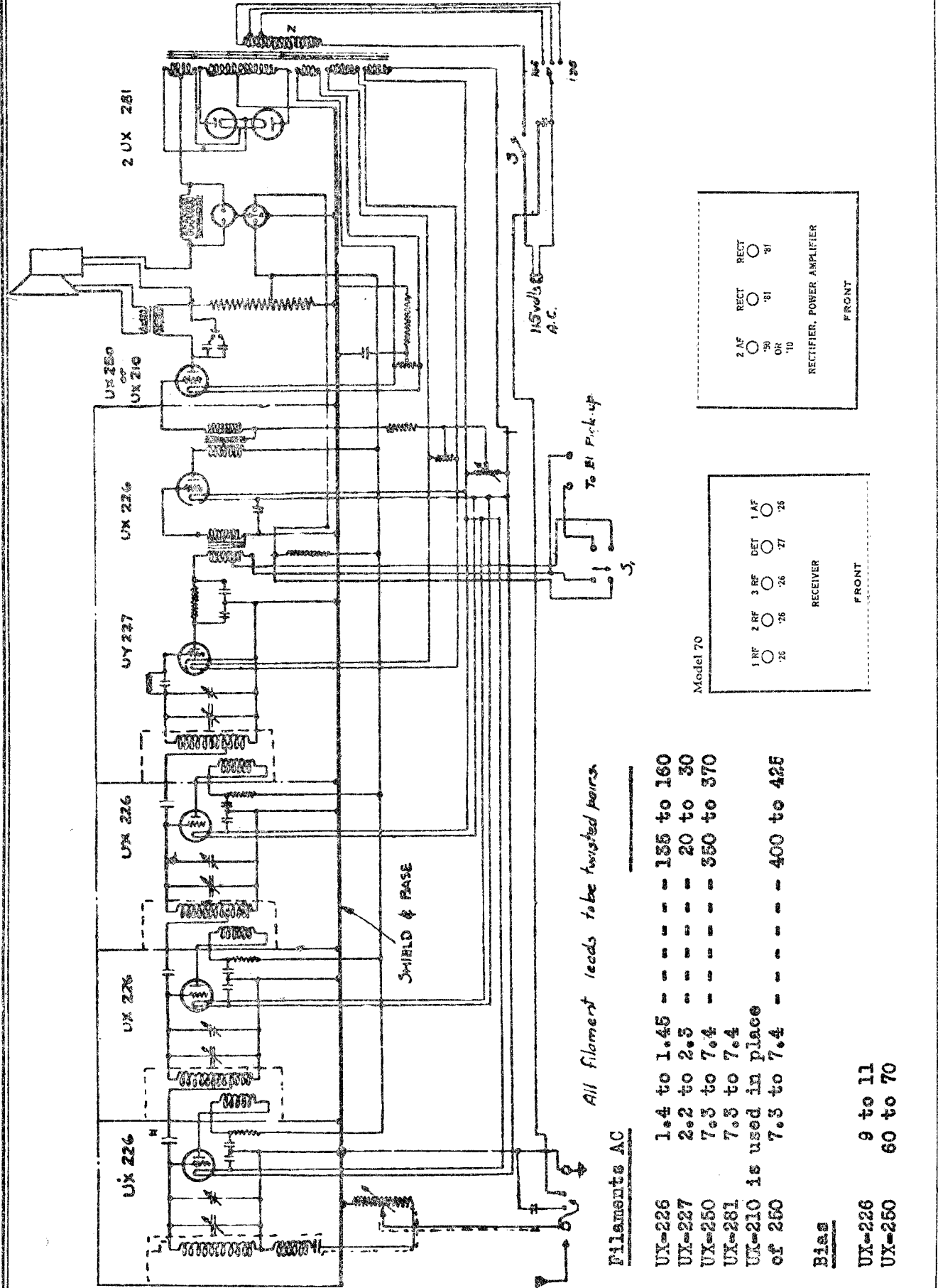
AMRAD CORPORATION

MODEL 7100 Receiver
MODEL 7191 Power Unit



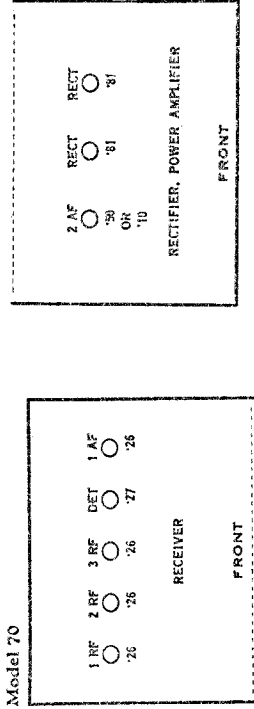
MODEL 70

AMRAD CORPORATION



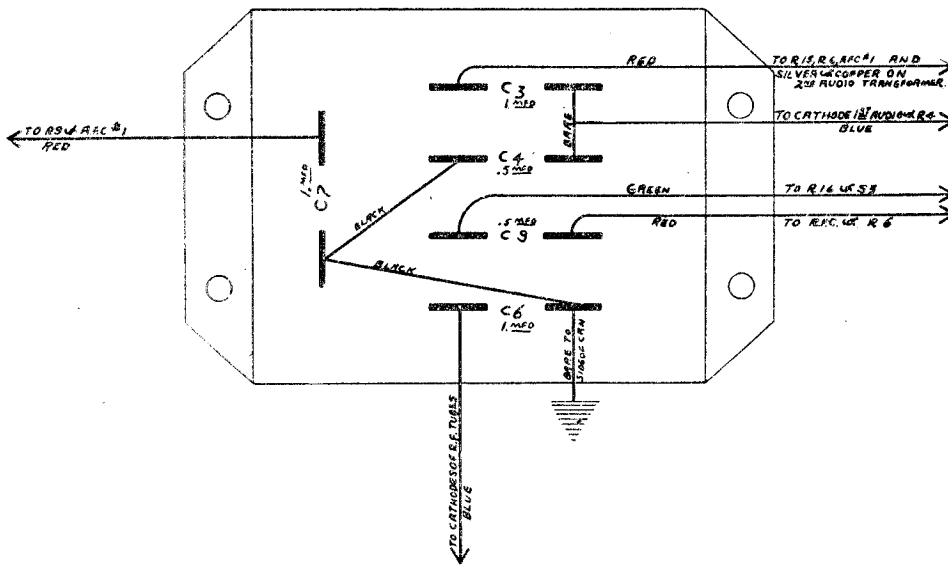
All filament leads to be twisted pairs

Filaments AC	
UX-226	1.4 to 1.45 - - - - - 155 to 160
UX-227	2.2 to 2.3 - - - - - 20 to 30
UX-250	7.3 to 7.4 - - - - - 350 to 370
UX-281	7.3 to 7.4
UX-210 is used in place of 250	7.3 to 7.4 - - - - - 400 to 425
Bias	
UX-226	9 to 11
UX-250	60 to 70



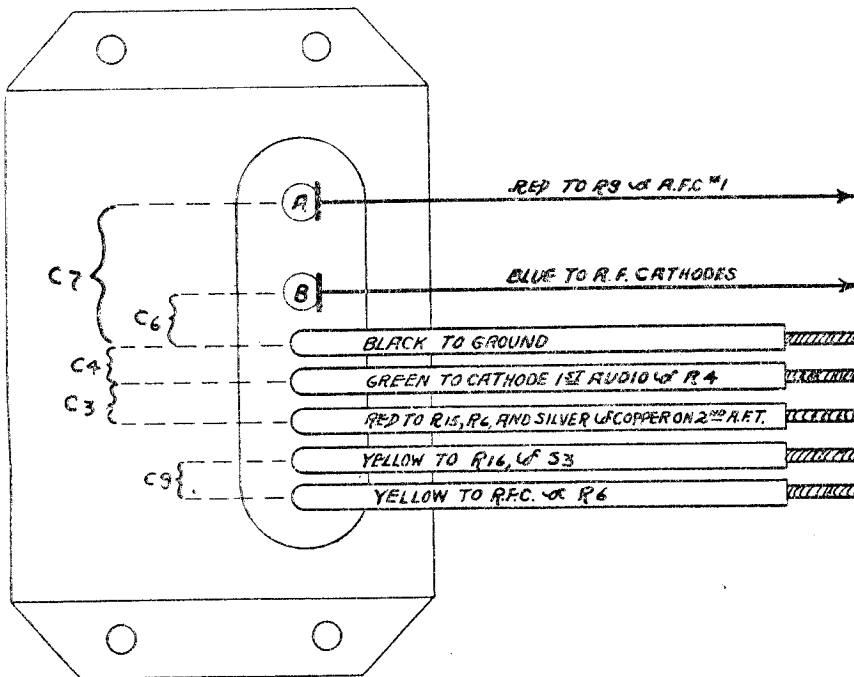
MODEL Bel-Canto 81
Condenser Data

AMRAD CORPORATION



BY-PASS BLOCK CONDENSER, NO. 8113

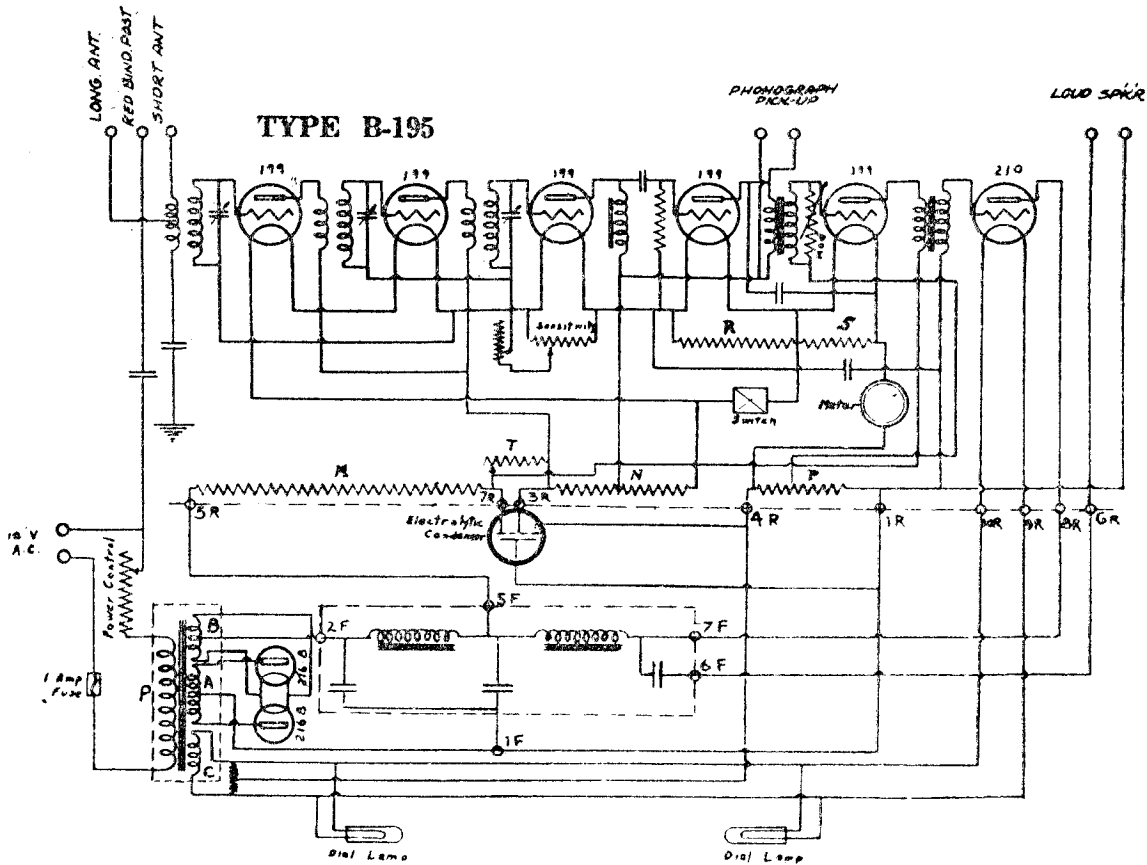
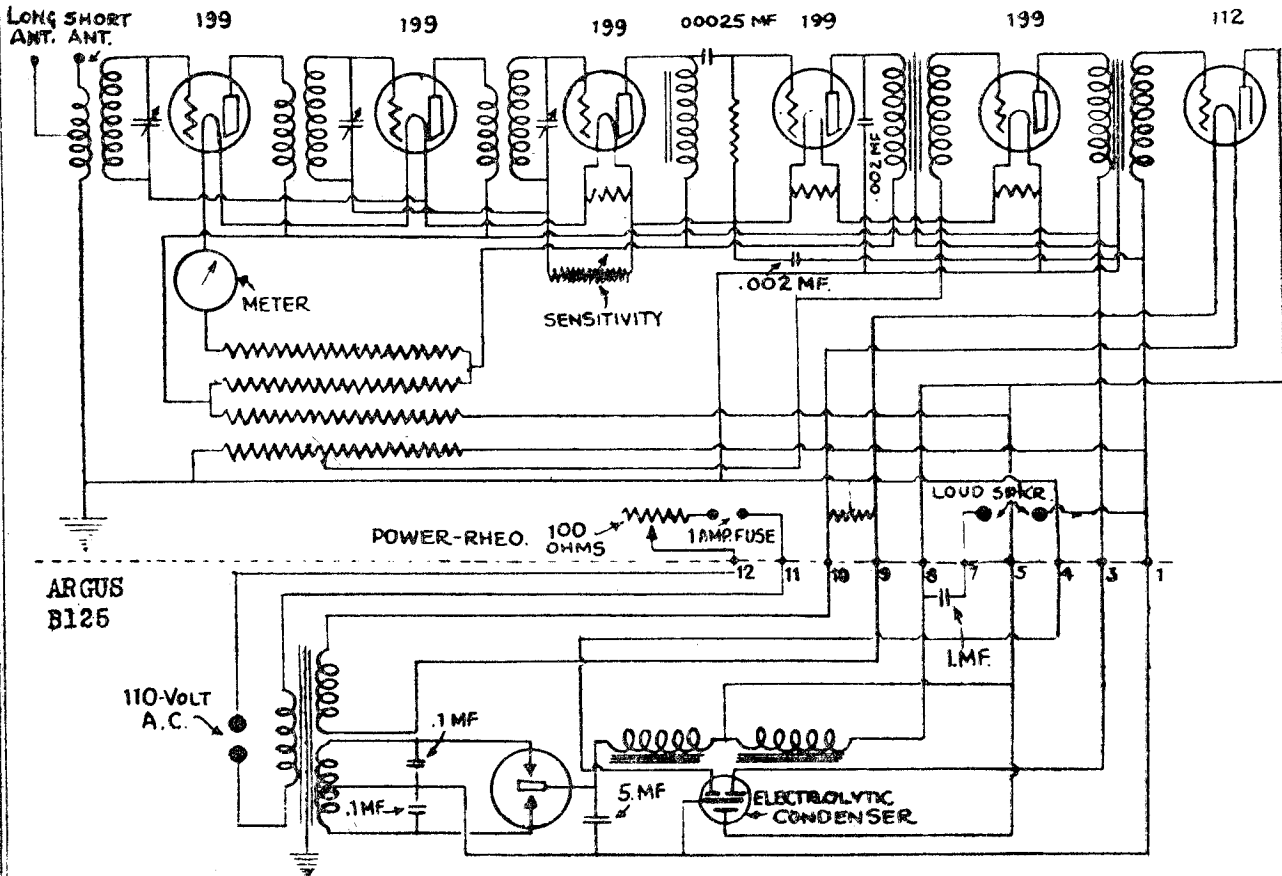
"Lug Terminal" Style. This block contains Fixed Condensers, C3, C4, C6, C7, C9. The different units are indicated, with their connections to their respective circuits.



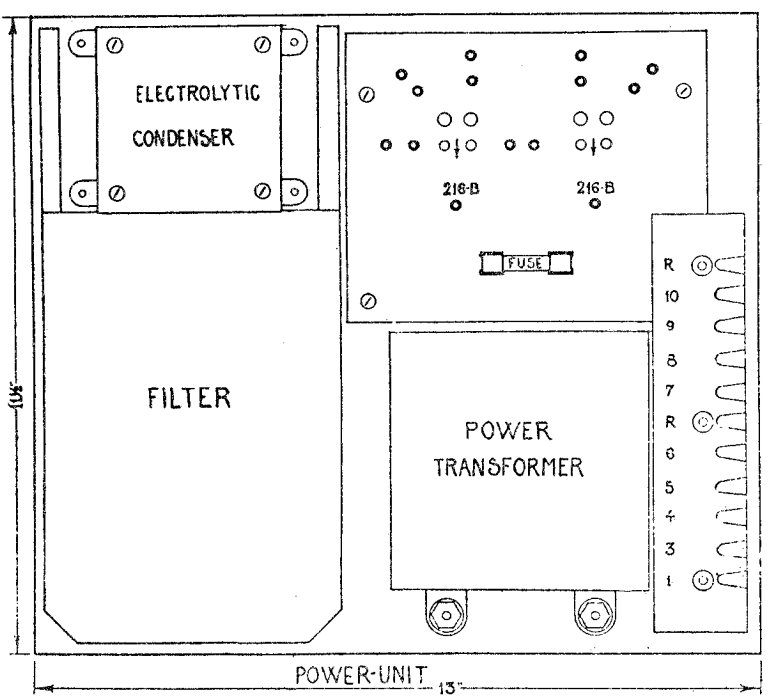
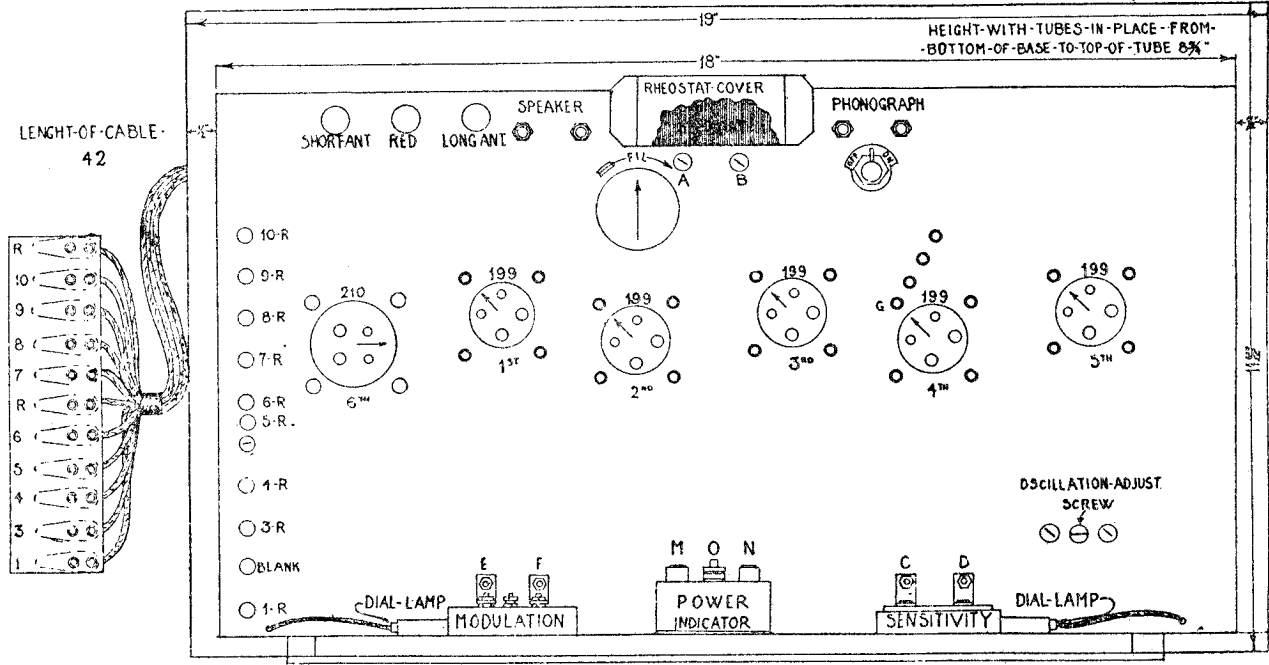
BY-PASS BLOCK CONDENSER, NO. 8113

"Wire Terminal" Style. This block contains the same units as does the No. 8113 "Lug Terminal" Style. To test for capacity, opens or shorts, it is necessary to disconnect at least one terminal of the unit from the circuit.

ARGUS RADIO CORP.



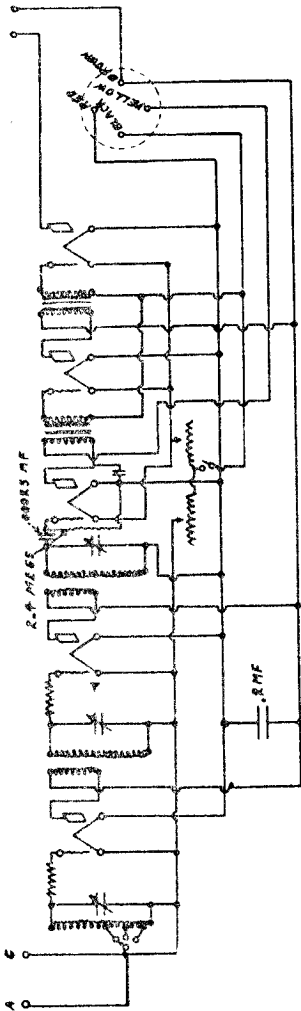
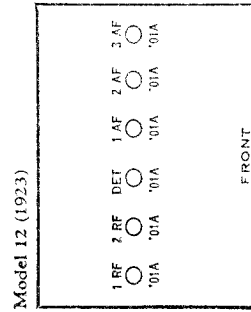
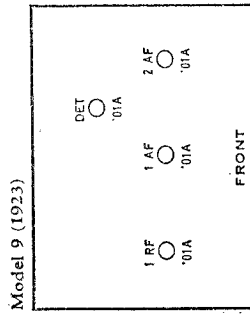
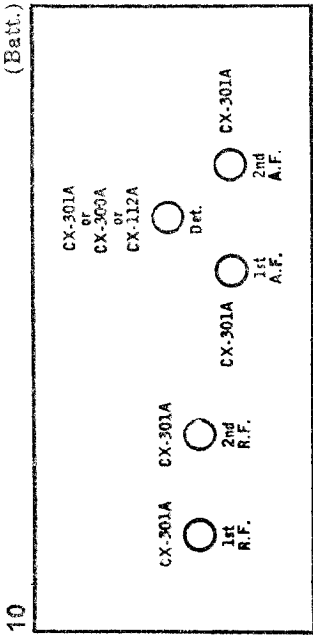
ARGUS RADIO CORP.



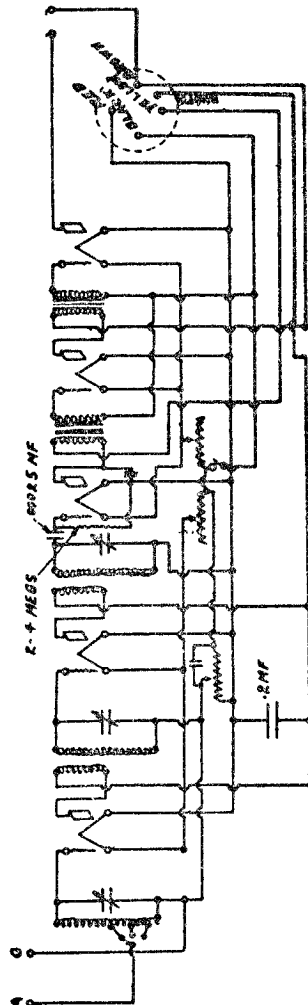
Inside view of ARGUS ELECTRIC RADIO RECEIVER, Model B195,
TWO-PIECE CHASSIS. Diagram shows location of connecting cables.

ATWATER KENT MFG. CO.

MODEL 10
 MODEL 10-B
 MODEL 12

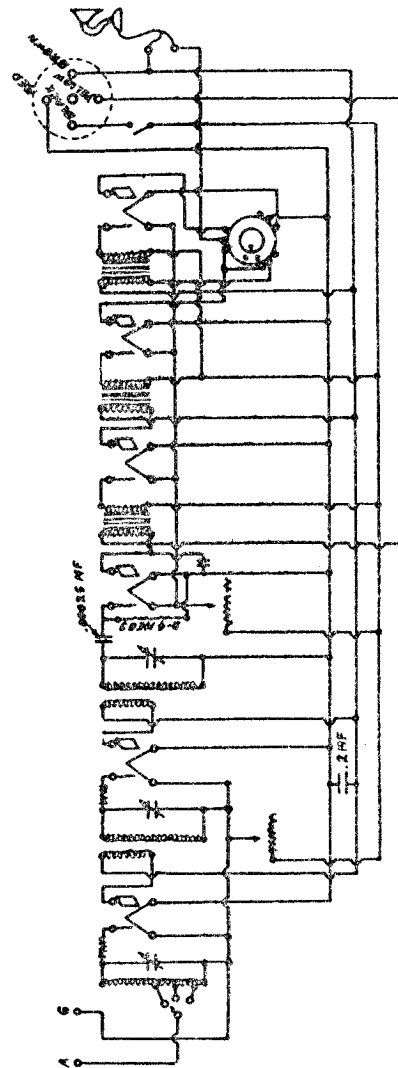


MODEL 10 No. 4700



MODEL 10-B

NOTE.—This set has two R.F. rheostats (one for each R.F. tube). —F1R connects to the slider lead of the 1st R.F. rheostat instead of to —F2R.

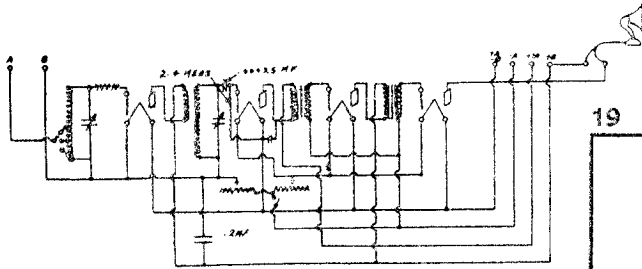


MODEL 12

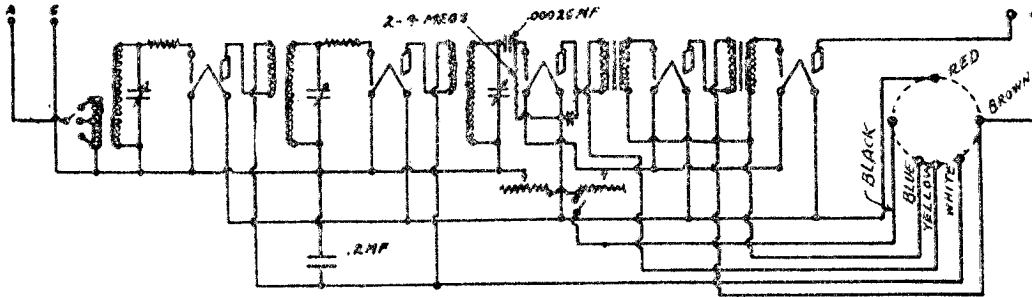
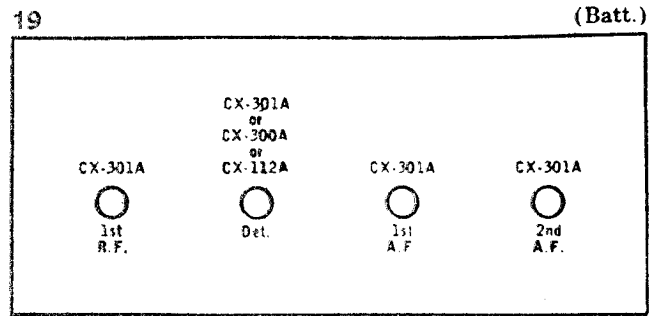
(Diagram shows one rheostat controlling detector and all three A.F. tubes. In actual set, rheostat controls detector and 1st audio only, 2nd and 3rd audio tubes being on separate fixed resistances.)

MODEL 19
 MODEL 20 # 7570
 MODEL 20 # 4640

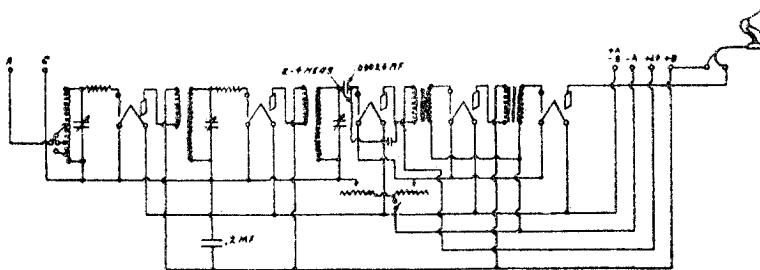
ATWATER KENT MFG. CO.



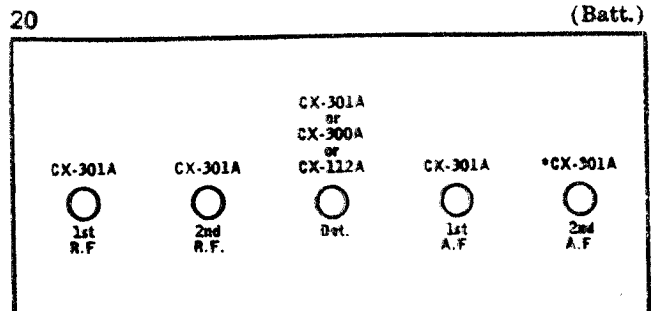
MODEL 19 SET No. 4850.



MODEL 20 COMPACT SET No. 7570. WIRING DIAGRAM.



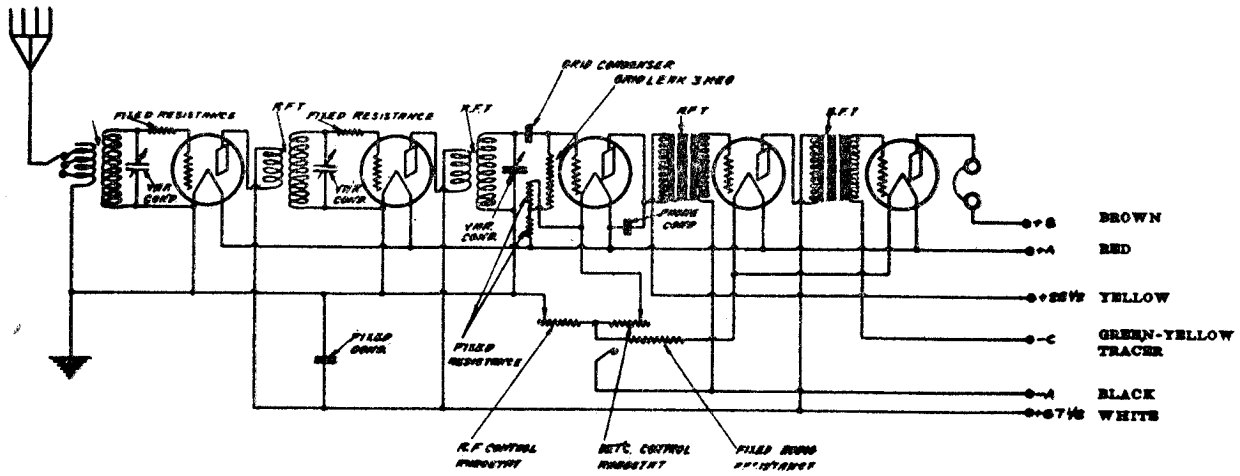
MODEL 20 SET No. 4640.



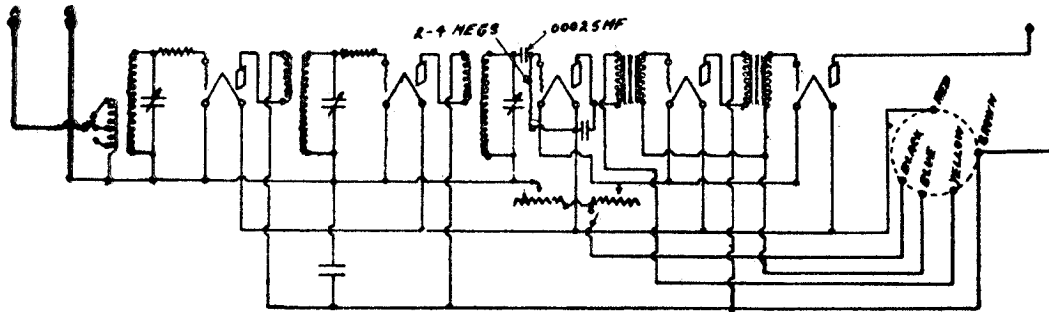
* This tube is a CX-371A in Model 20 compact.

MODRL 20 # 7960
 MODEL 21 # 7780

ATWATER KENT MFG. CO.

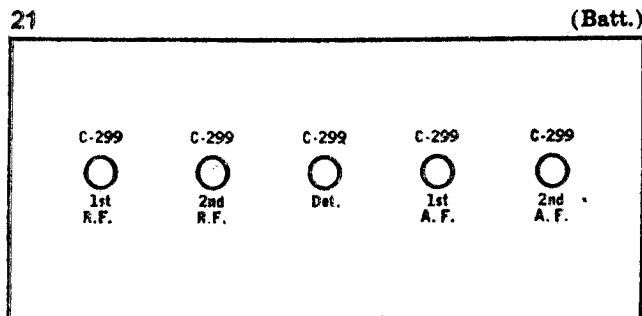
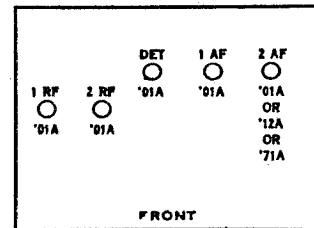


MODEL 20 COMPACT SET No. 7960. WIRING DIAGRAM.



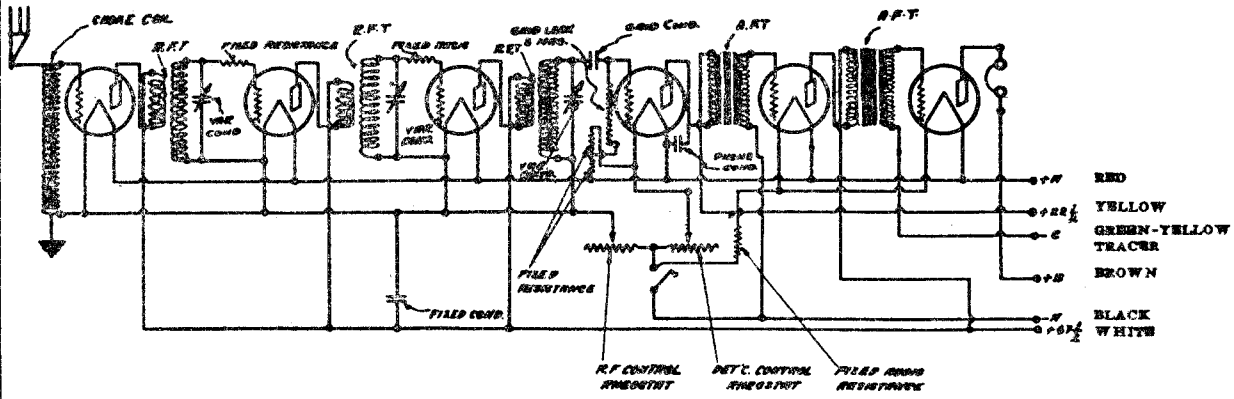
MODEL 21 DRY CELL SET No. 7780.

Model 20 Comp. (1925)

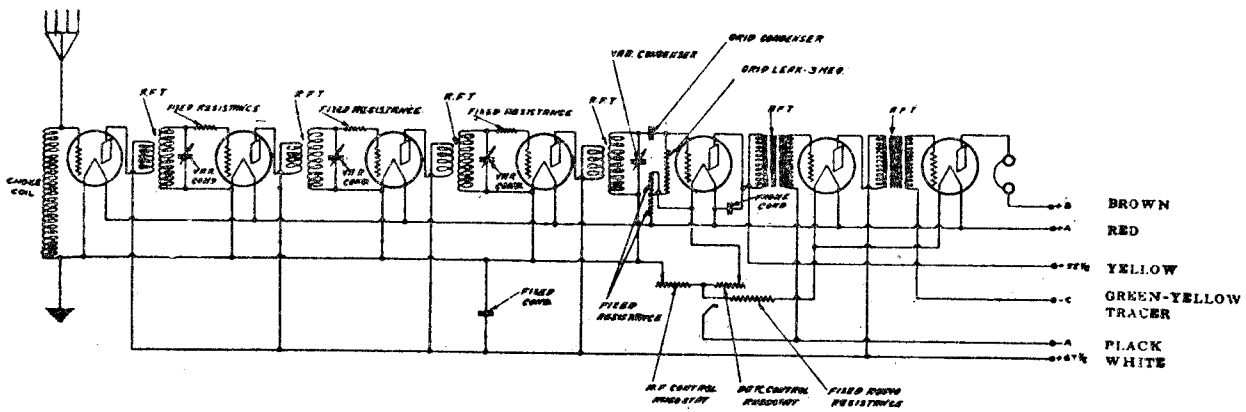


ATWATER KENT MFG. CO.

MODEL 30
MODEL 32
MODEL 35
MODEL 48



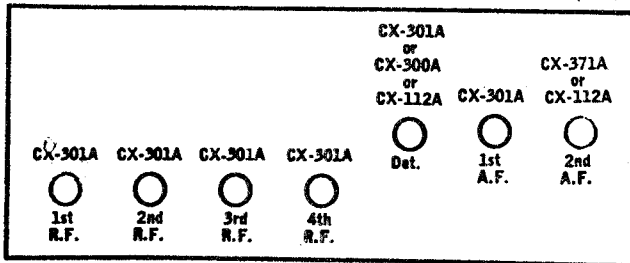
WIRING DIAGRAM OF MODELS 30, 35 AND 48. (In Model 35, one rheostat controls the three R.F. filaments and a fixed resistance is connected in series with the detector and two A.F. filaments.)



WIRING DIAGRAM OF MODEL 32.

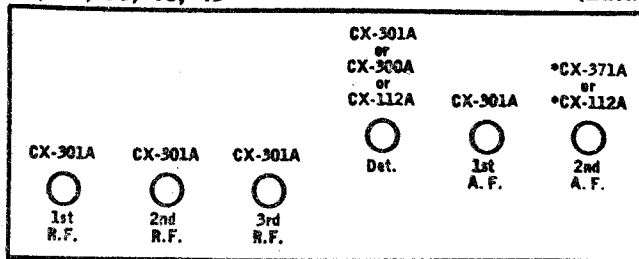
32

(Batt.)



30, 33, 35, 48, 49

(Batt.)



ATWATER KENT MFG. CO.

MODEL 33
 MODEL 36 Early
 MODEL 36 Late
 MODEL 49

MODEL 36 ABOVE SERIAL No. 2,610,000

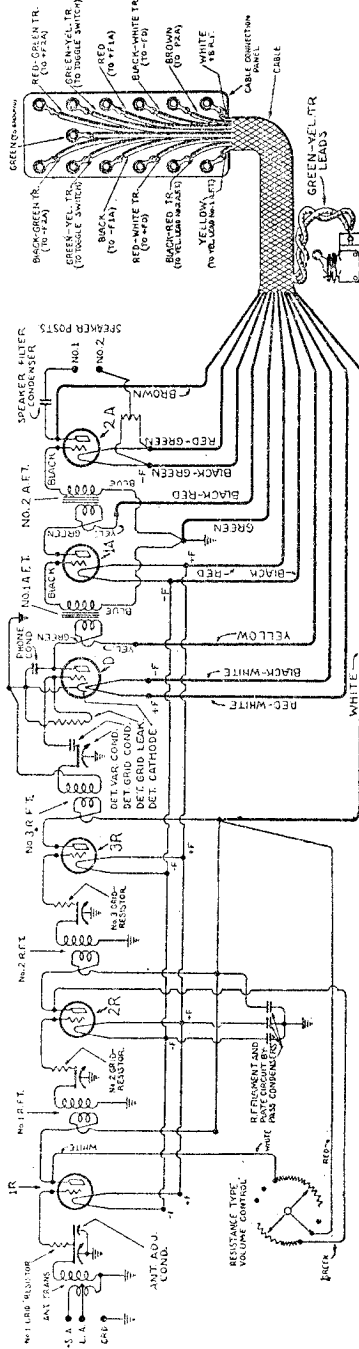
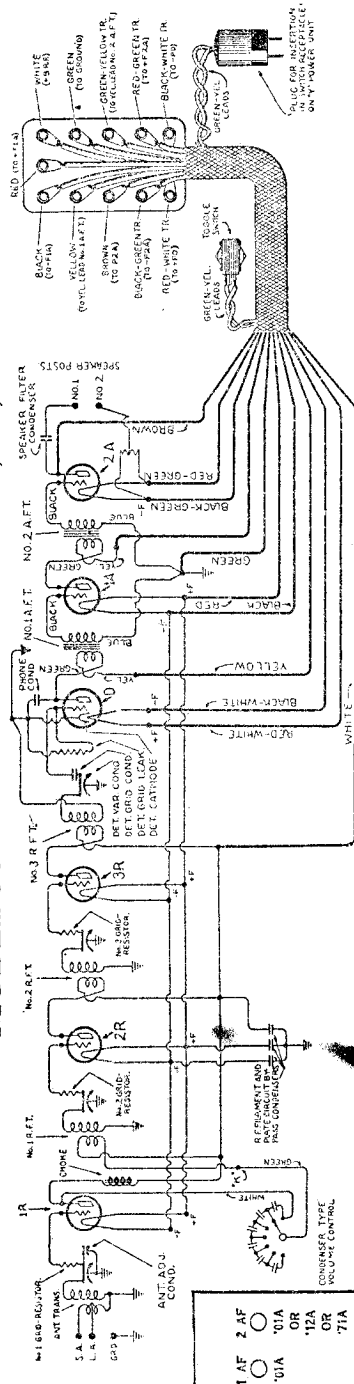


FIG. 70. WIRING DIAGRAM OF MODEL 36 WITH RESISTANCE-TYPE VOLUME CONTROL.

MODEL 36 BELOW SERIAL No. 2,610,000

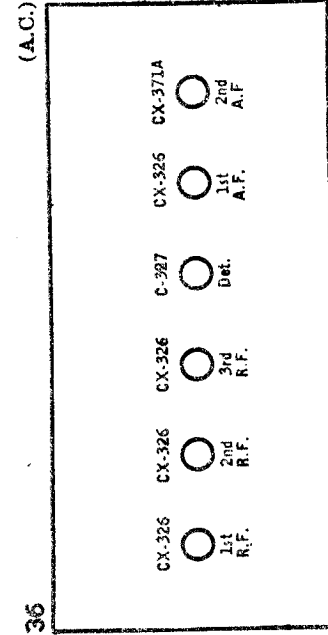


WIRING DIAGRAM OF MODEL 36 WITH CONDENSER-TYPE VOLUME CONTROL.

Model 33 (1927)

- | | | | | | |
|------|------|------|------|------|--|
| DET | 1 AF | 2 AF | | | |
| 1 RF | 2 RF | 3 RF | OR | OR | |
| '01A | '01A | '01A | '12A | '71A | |
| | | | | | |

FRONT



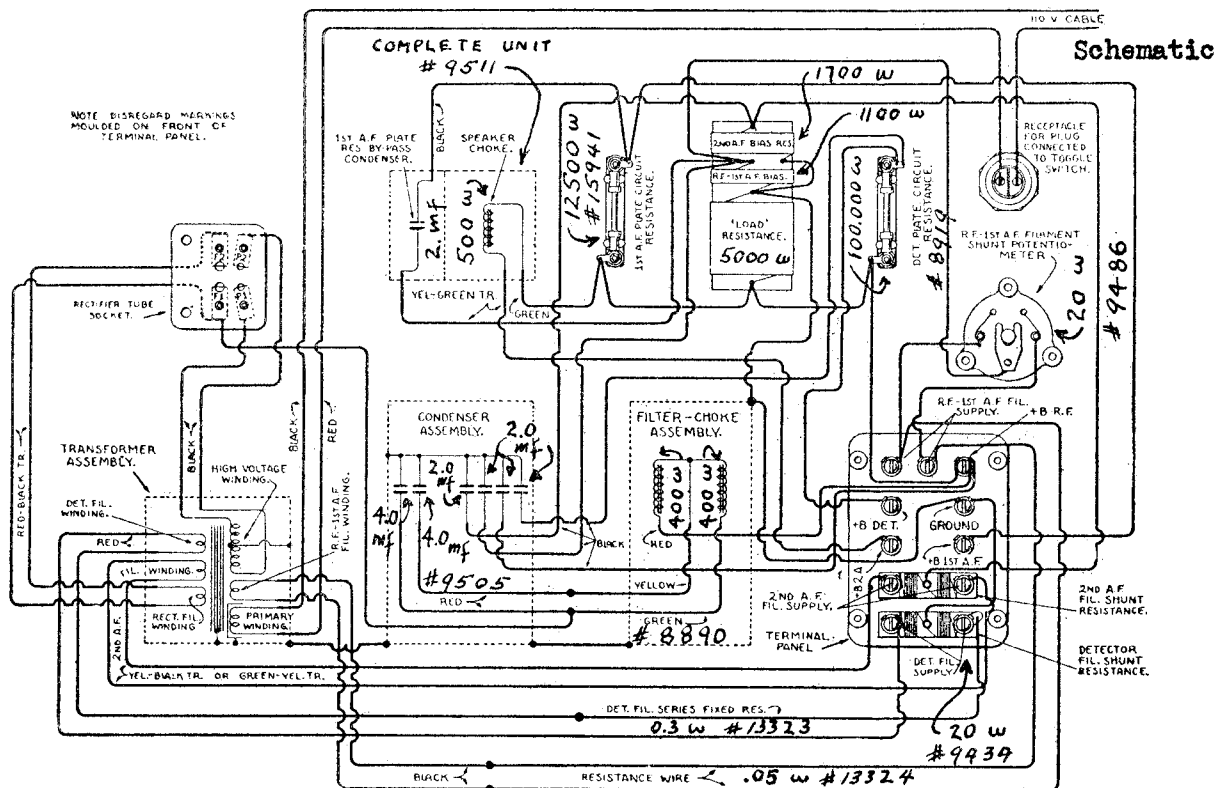
36

WIRING DIAGRAM—MODELS 33 AND 49.

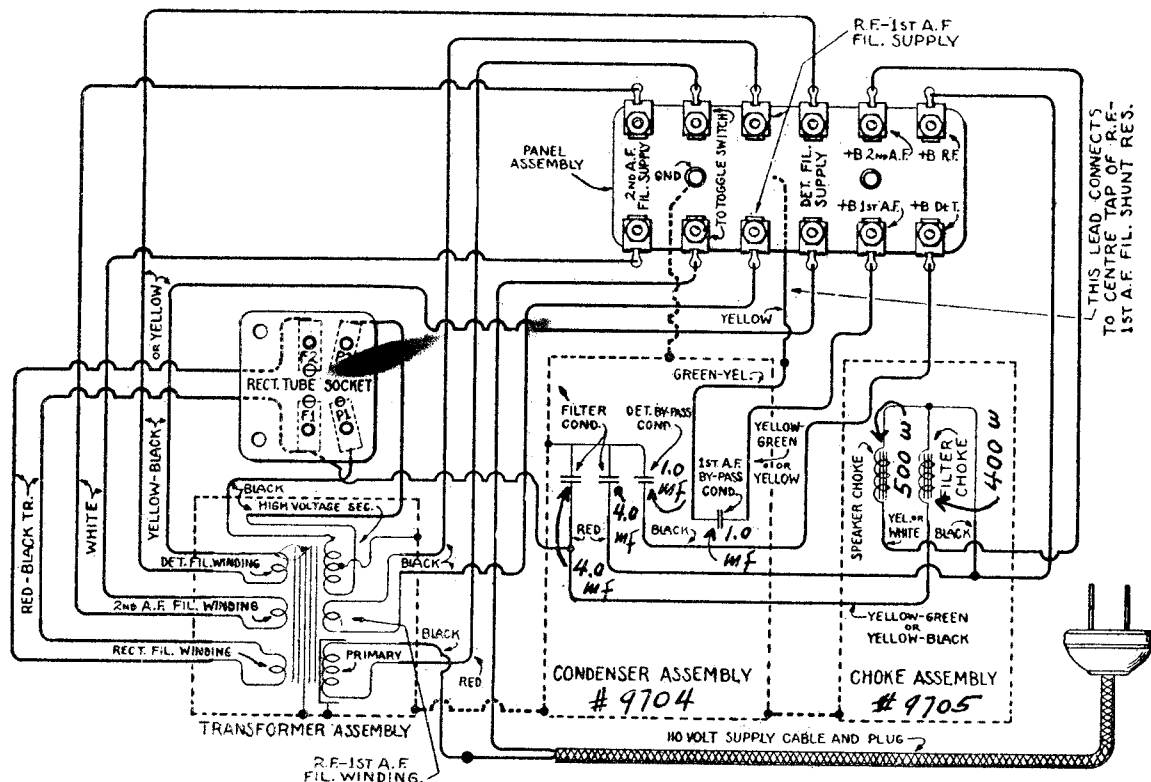
CX-320 used in separate power unit.

ATWATER KENT MFG. CO.

MODEL 36
Power Pack



Model "Y" Power Units below Serial No. 260,000
(Used with Model 36 Sets below Serial No. 2,610,000)

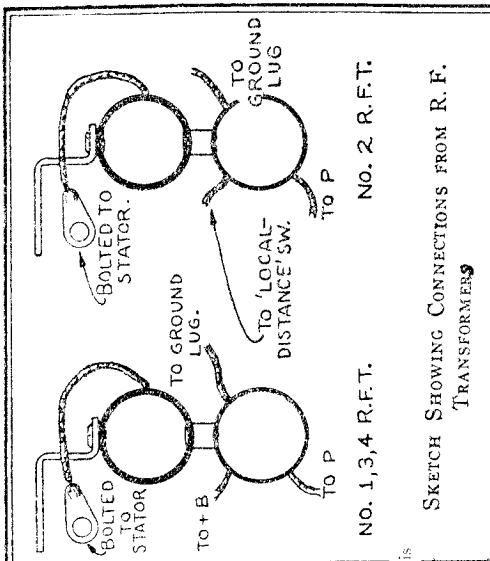
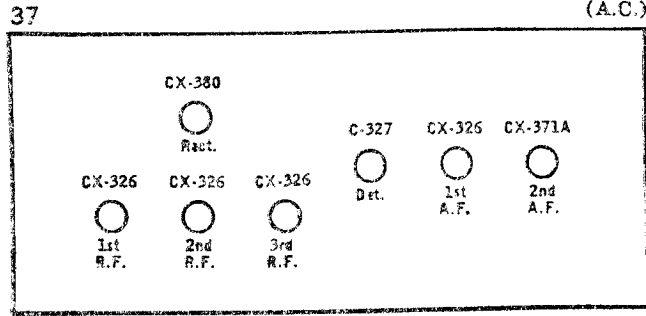


Model "Y" Power Units Above Serial No. 260,000
(Used with Model 36 Sets above Serial No. 2,610,000)

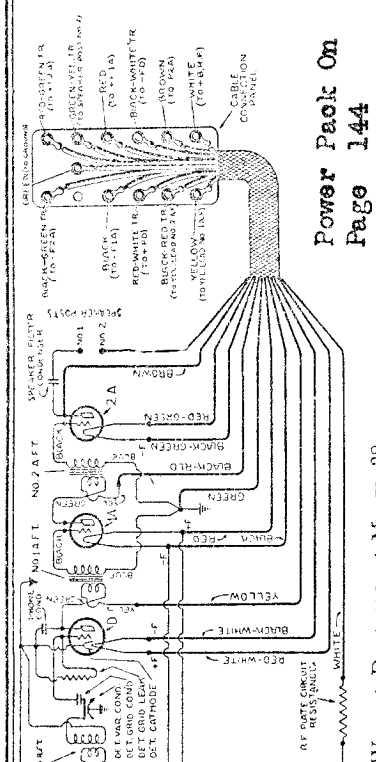
ATWATER KENT MFG. CO.

MODEL 37
MODEL 38

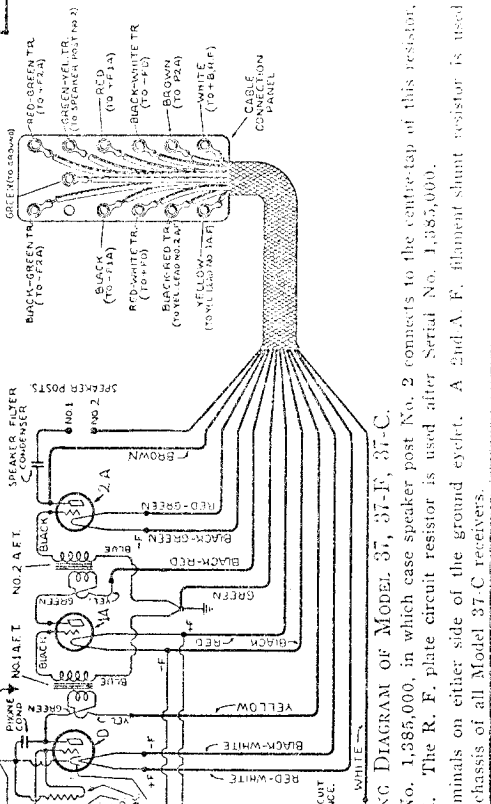
(A.C.)



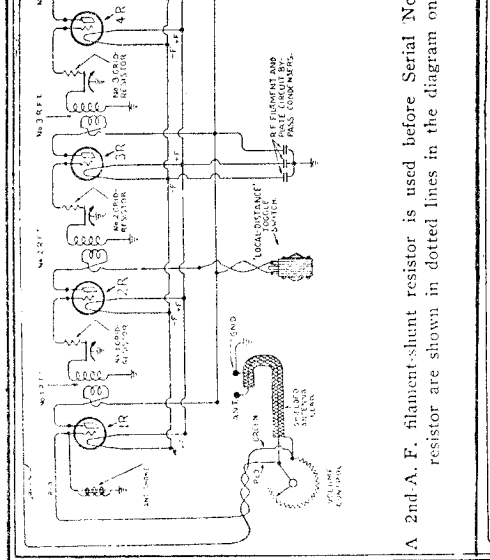
SKETCH SHOWING CONNECTIONS FROM R.F. TRANSFORMERS



WIRING DIAGRAM OF MODEL 38.



WIRING DIAGRAM OF MODEL 37, 37-F, 37-C.



38

ATWATER-KENT—Models 37-38
Line Voltage 115—On Early Models "B" and "C"
Voltages Are Lower Than Shown

TUBE NO. OR CONNECTION	TYPE	POSITION OF TUBE IN CHASSIS	TUBE OUT		TUBE IN CENTER		FEEDBACK PLUG IN SOCKET OF SET	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	A VOLTS	B VOLTS
1	226	1st A.F.	1.5	1.5	1.25	1.25	1.0	1.0
2	226	2nd R.F.	1.5	1.5	1.25	1.25	1.0	1.0
3	226	3rd R.F.	1.5	1.5	1.25	1.25	1.0	1.0
4	227	Det.	2.25	2.25	2.0	2.0	1.5	1.5
5	226	1st A.F.	1.5	1.5	1.25	1.25	1.0	1.0
6	226	2nd A.F.	1.5	1.5	1.25	1.25	1.0	1.0
7	280	Rectifier	4.5	4.5	4.0	4.0	3.0	3.0
8								
9								
10								

MODEL 37
Power Pack
Early and Late
Data
Schematic

ATWATER KENT MFG. CO.

RESISTORS	Early	Late
Detector plate	100000 ohms #8919 Green paint	65000 ohms # 15592 1 watt black or bl. and gr.
1st a-f plate	12500 ohms #15941 red See late.	12500 ohms # 15941 red or purple and yellow or red.
R-f and 1st a-f bias	1100 ohms # 9691 elliptical	625 ohms # 13128 elliptical
2nd a-f bias	1750 ohms # 9692 elliptical	2200 ohms # 13289 elliptical
Filament shunt	20 ohms # 9434	20 ohms # 9434 flat, wire
Speaker choke	500 ohms	500 ohms
Filter chokes	1600 ohms total	1600 ohms total
CONDENSERS	See schematic	See Schematic. Condenser unit is # 13315. Also houses transformer.

Special Note.

A 1. mfd condenser is also contained in the transformer-condenser housing but this condenser is not connected in the model 37 power pack.

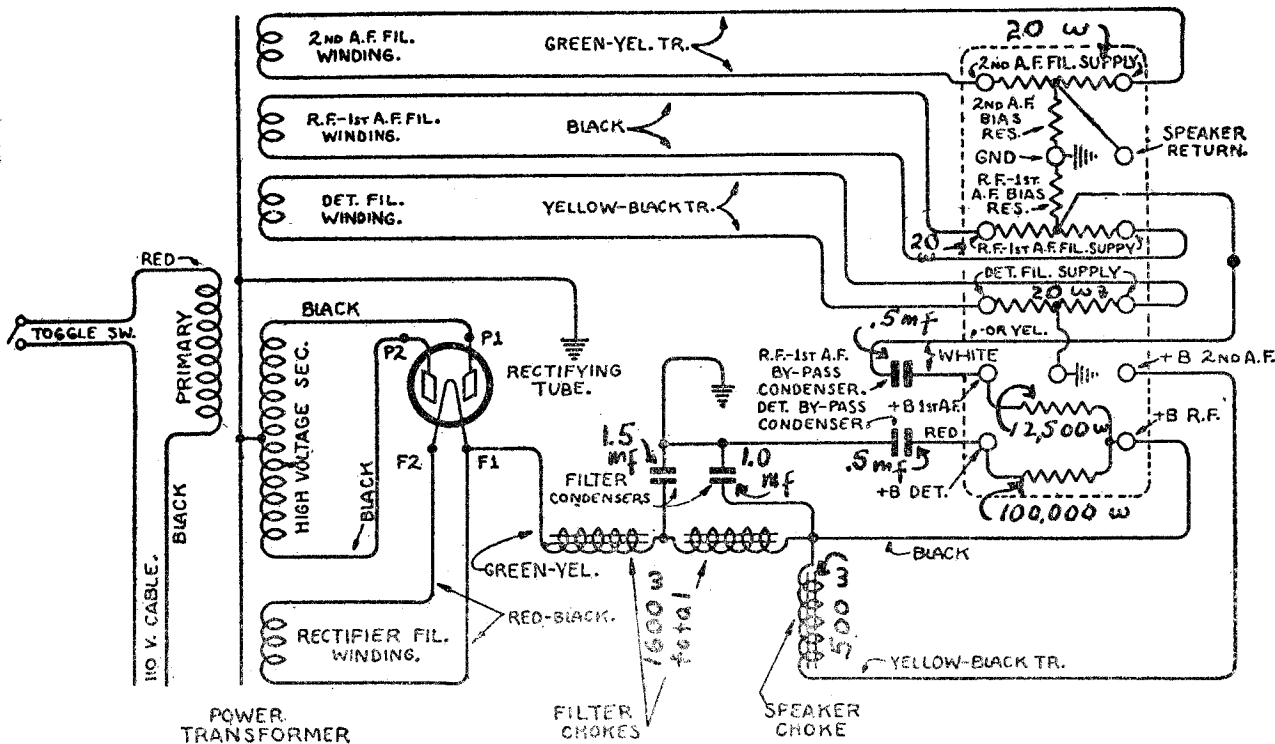


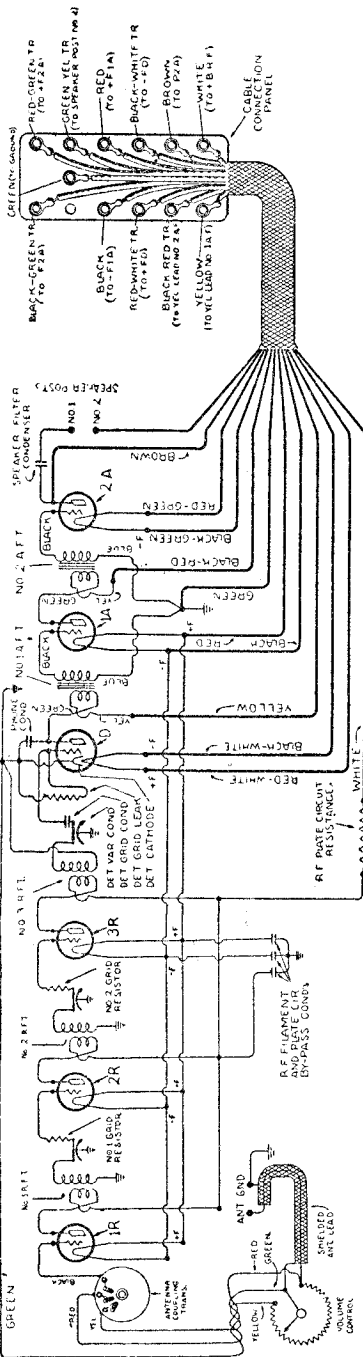
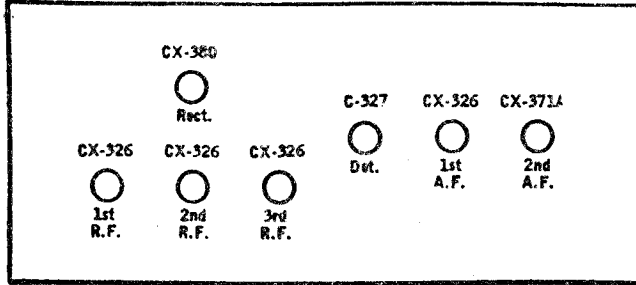
DIAGRAM OF POWER UNIT IN MODELS 37 AND 38

ATWATER KENT MFG. CO.

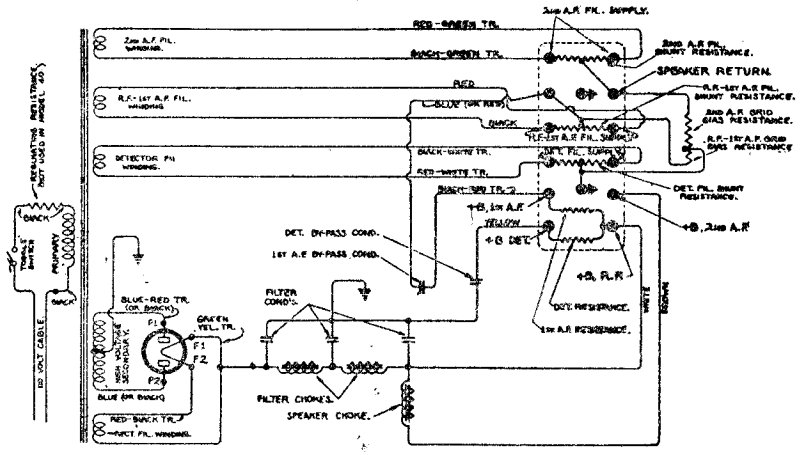
MODEL 40
MODEL 42
MODEL 52

40, 42, 52

(A.C.)



Model 52 does not have the shielded antenna lead, but is provided with two twenty-foot leads which are connected to the volume control, black for antenna and black green tracer for ground. Model 56 and 57 have antenna and ground posts at the bottom of the cabinet.



SCHEMATIC DIAGRAM OF POWER UNIT IN MODELS 40, 42, 44, AND 52. SOME EARLY UNITS OF THIS TYPE HAVE COLOR SCHEME SIMILAR TO UNIT IN MODEL 56 SET. NOTE THAT COLORS AS NOW STANDARDIZED CORRESPOND WITH THE COLORS OF IXT-CABLE LEADS.

ATWATER-KENT—Model 40
Line Voltage 115

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. ETC.	READINGS PLANS IN ORDER OF SET					TUBE IN TEST USE			
			A VOLTS	D VOLTS	A VOLTS	D VOLTS	G VOLTS	CATHODE VOLTS	INTERNAL PLATE VOLTS	PLATE VOLTS	PLATE C.A. CONDUCT.
1	228	1st. R.F.	1.5	145	1.28	138	15	—	4.8	8.5	3.0
2	228	2nd. R.F.	1.5	145	1.25	138	10	—	4.8	8.5	3.0
3	228	3rd. R.F.	1.5	145	1.25	138	10	—	4.8	8.5	3.0
4	227	Detector	2.25	137	2.0	40	—	—	2.2	8.5	0.0
5	228	1st. A.F.	1.5	172	1.28	130	5	—	3.0	7.5	3.5
6	175A	2nd. A.F.	4.8	210	4.1	148	32	—	14.4	15.0	1.0
7	250	Rectifier	—	—	4.5	—	—	—	13.5	—	—

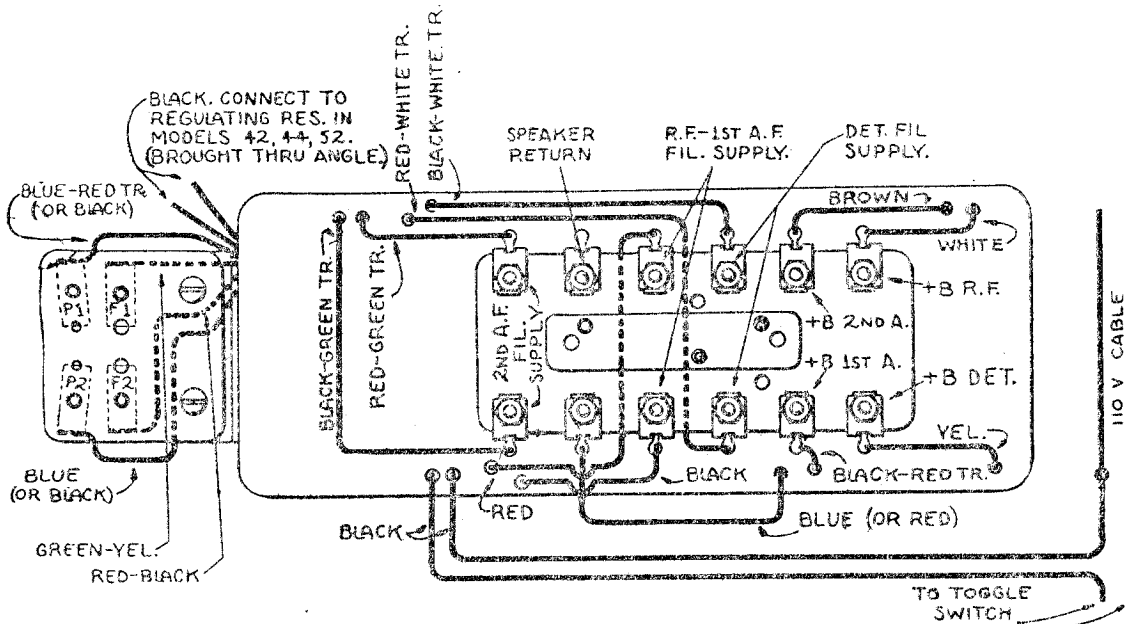
ATWATER-KENT—Models 42-44-52-56
Line Voltage 115—4th R. F.—Tube in Model 44 Only

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. ETC.	READINGS PLANS IN ORDER OF SET					TUBE IN TEST USE			
			A VOLTS	D VOLTS	A VOLTS	D VOLTS	G VOLTS	CATHODE VOLTS	INTERNAL PLATE VOLTS	PLATE VOLTS	PLATE C.A. CONDUCT.
1	228	1st. R.F.	1.55	164	1.4	152	12	—	5.4	9.5	3.5
2	228	2nd. R.F.	1.55	164	1.4	152	12	—	5.4	9.5	3.5
3	228	3rd. R.F.	1.5	156	1.4	152	11.5	—	5.3	9.5	3.5
4	227	Det.	2.25	174	2.10	38	0	—	2.2	8.5	0.0
5	228	1st. A.F.	1.5	162	1.4	150	10.5	—	5.0	8.5	3.5
6	171A	2nd. A.F.	4.7	232	4.5	168	35	—	14.6	15.0	1.0
7	250	Rectifier	—	—	4.8	—	—	—	13.5	—	—

MODEL 40,42,44,52
 Power Unit Layout
 MODEL 40,45
 2nd Type Power Unit

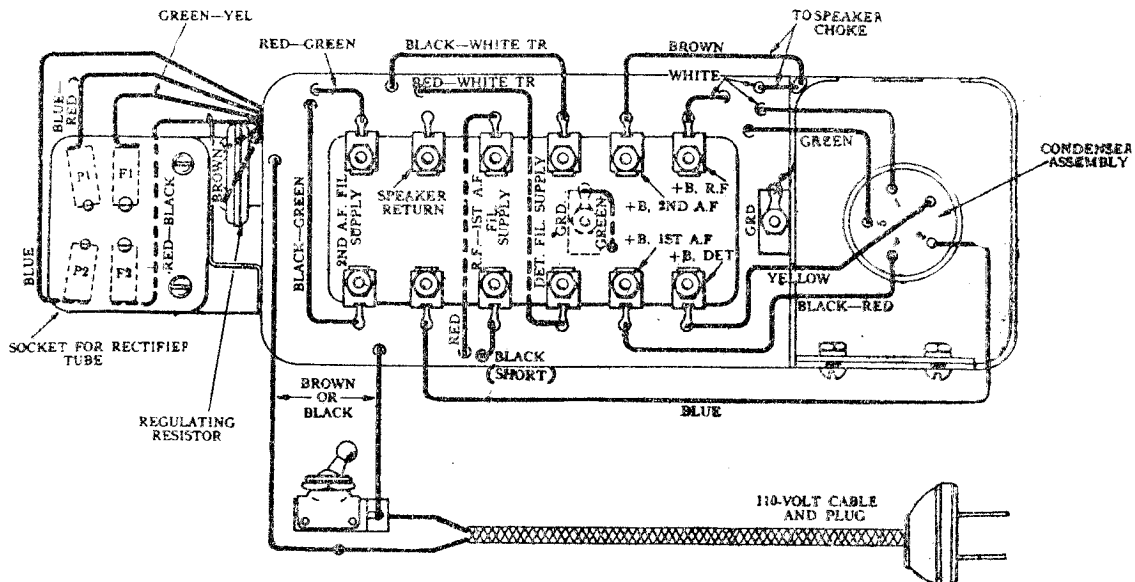
ATWATER KENT MFG. CO.

Schematic



POWER UNIT IN MODELS 40, 42, 44 AND 52, SHOWING CONNECTIONS FROM SEALED CONTAINER TO PANEL ASSEMBLY, RECTIFIER SOCKET AND REGULATING RESISTANCE

This view shows the approximate position of leads from sealed container. In Models 42, 44 and 52, a hole is cut in the rectifier-socket mounting angle and the two black leads are brought up through the hole and connect to the regulating resistance, which is mounted upright at the left-hand end of the sealed container.



VIEW SHOWING CONNECTIONS IN 2ND TYPE OF POWER UNIT FOR MODELS 40 AND 45.

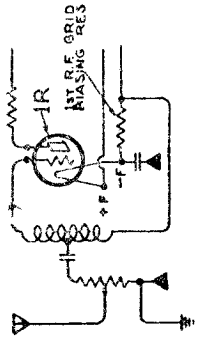
This view shows the panel assembly moved to left of normal position. The regulating resistor is not used in these models.

ATWATER KENT MFG. CO.

MODEL 41 DC

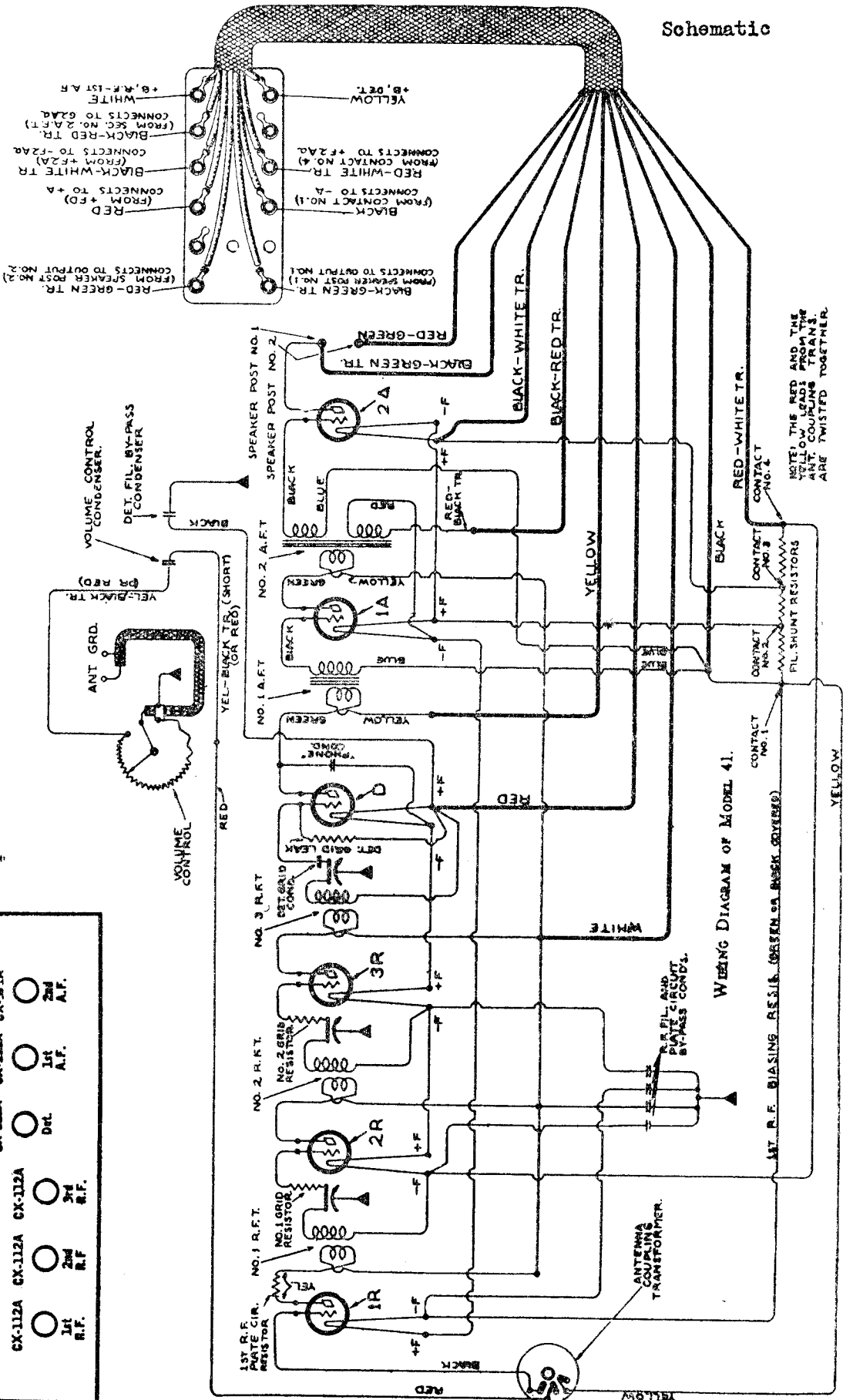
Schematic

NOTE: THIS SYMBOL INDICATES CONNECTION TO THE FRAME OF SET.



(D.C.)

CX-371A	2nd A.F.	CX-371A	2nd A.F.
CX-112A	1st A.F.	CX-112A	1st A.F.
CX-112A	2nd R.F.	CX-112A	2nd R.F.
CX-112A	1st R.F.	CX-112A	1st R.F.



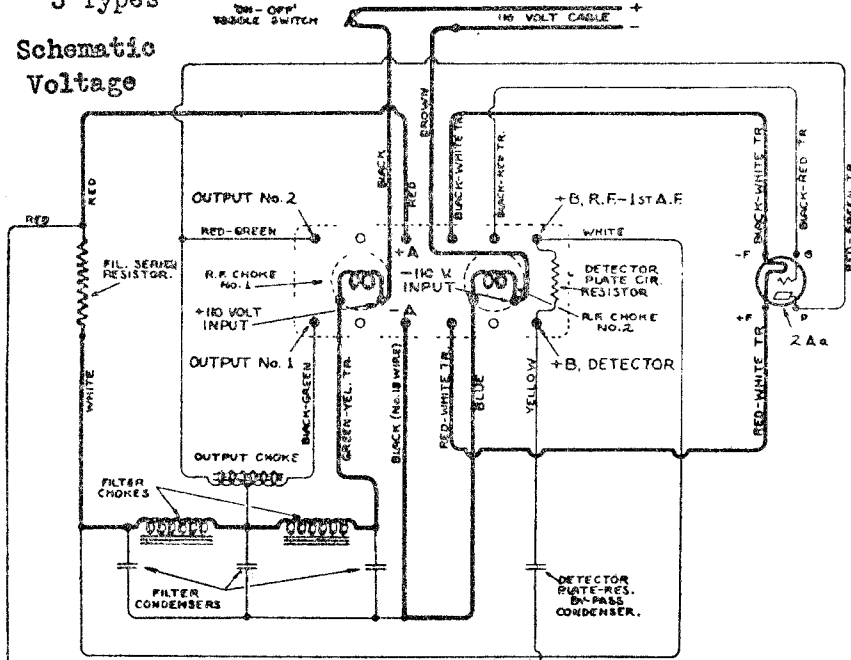
WINDING DIAGRAM OF MODEL 41.

NOTE: THE RED AND THE YELLOW LEADS FROM THE ANT. COUPLING TRANS. ARE TWISTED TOGETHER.

MODEL 41
Power Pack
3 Types

ATWATER KENT MFG. CO.

Schematic
Voltage



WIRING DIAGRAM OF 1ST TYPE OF POWER UNIT FOR MODEL 41.

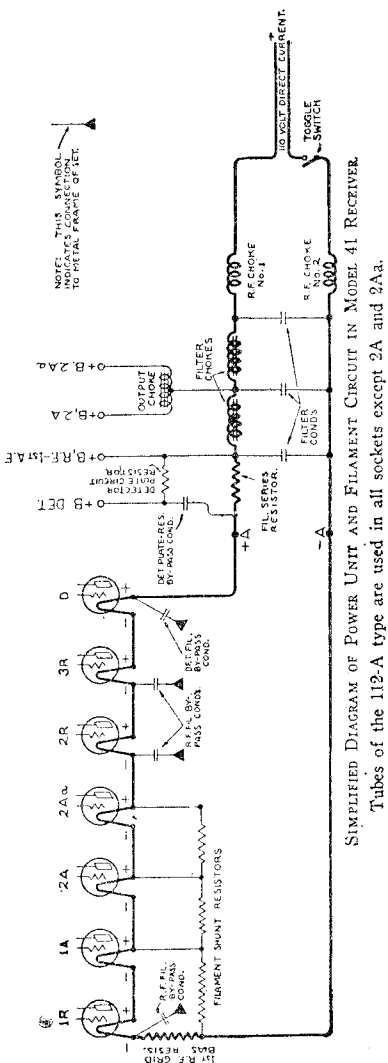
Plate Voltage	Filament Voltage
60 V.	1st R.F.
65 V.	2nd R.F.
65 V.	3rd R.F.
24 V.	Detector
81 V.	1st A.F.
81 V.	2nd A.F.
4.8 V.	1st R.F.
4.9 V.	2nd R.F.
4.6 V.	3rd R.F.
4.6 V.	Detector
4.9 V.	1st A.F.
4.8 V.	2nd A.F.

Voltage at 2nd A.F. Tube on Power Unit

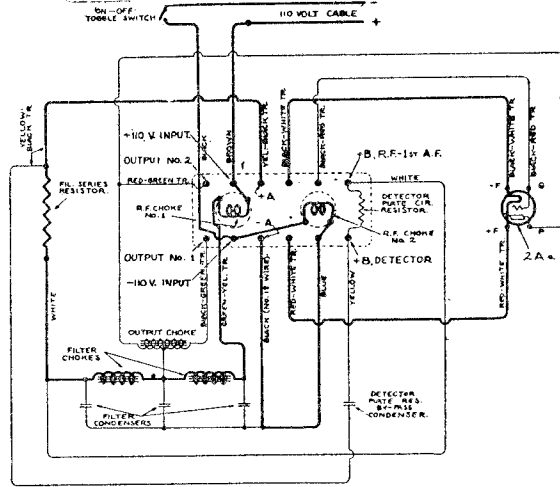
Filament Voltage	4.8 V.
Grid Bias Voltage	9.7 V.
Plate Voltage	85 V.

Grid Bias

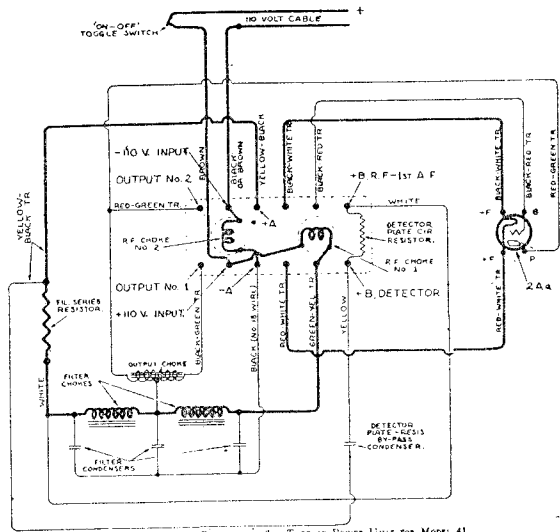
1st R.F.	2 V.
1st A.F.	4.8 V.
2nd A.F.	9.7 V.



SIMPLIFIED DIAGRAM OF POWER UNIT AND FILAMENT CIRCUIT IN MODEL 41 RECEIVER.
Tubes of the 112-A type are used in all sockets except 2A and 2A.



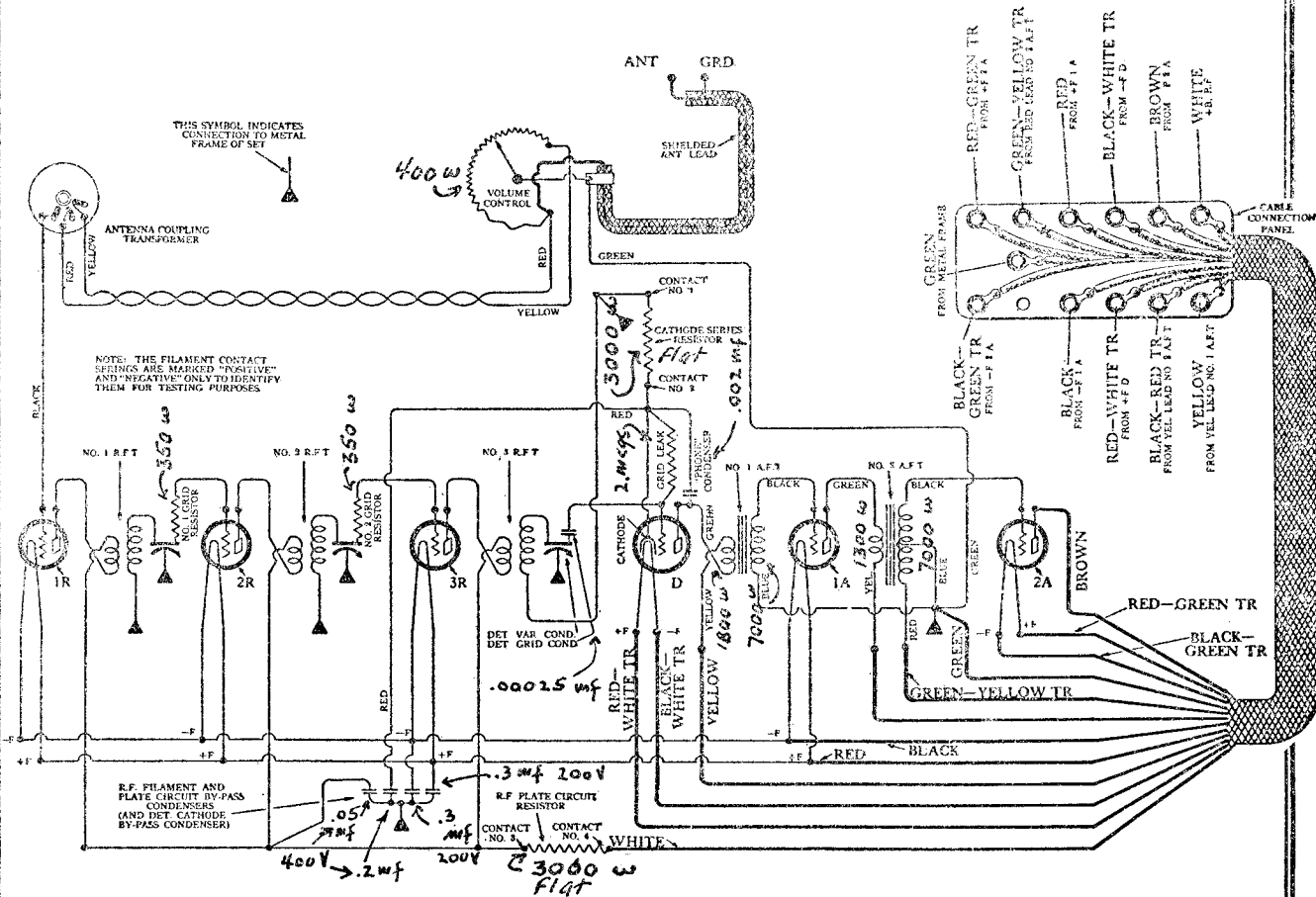
WIRING DIAGRAM OF 2ND TYPE OF POWER UNIT FOR MODEL 41.



WIRING DIAGRAM OF 3RD TYPE OF POWER UNIT FOR MODEL 41.

ATWATER KENT MFG. CO. MODEL 43 Receiver

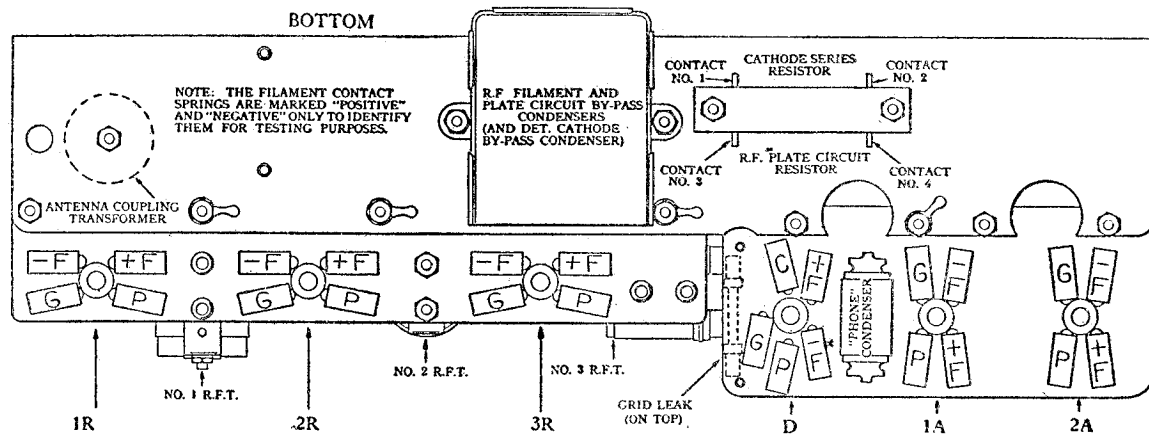
Schematic



WIRING DIAGRAM OF MODEL 43 SET.

The +B, 1st A. F. cable lead is black with a red tracer.

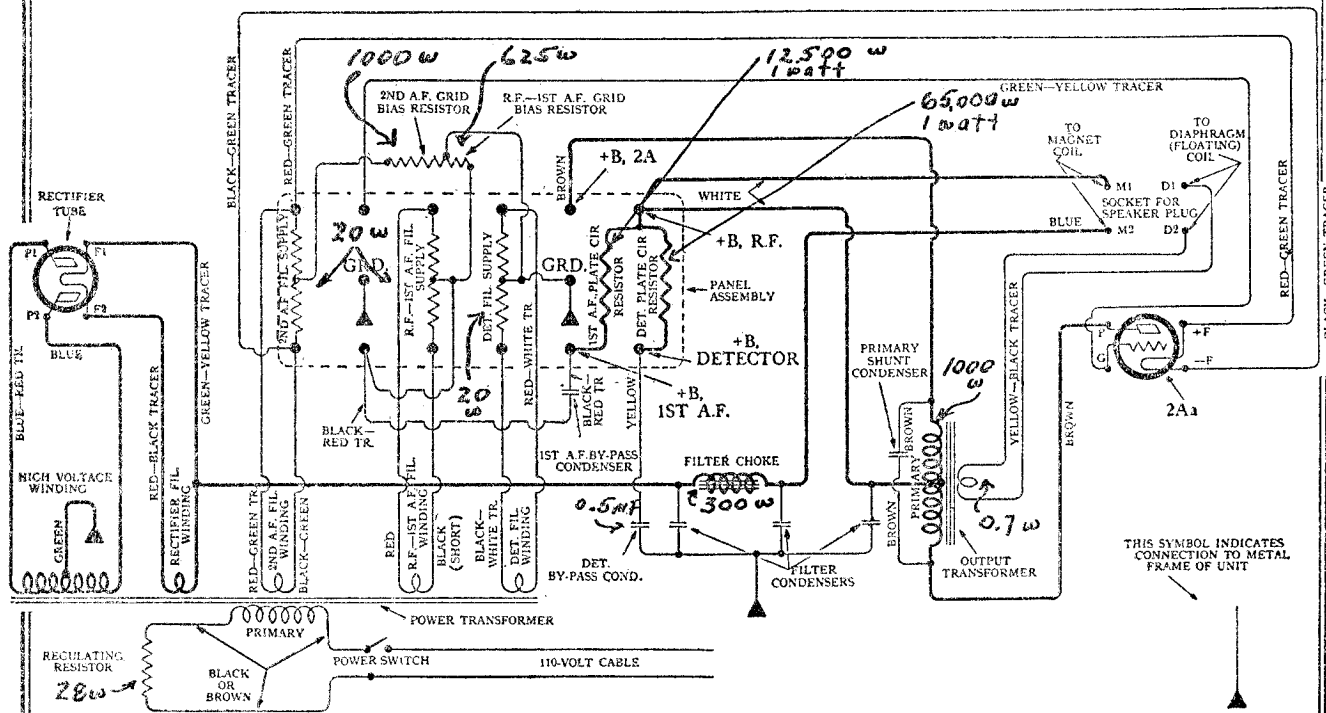
Wiring diagram of Model 43 power pack is shown on 152



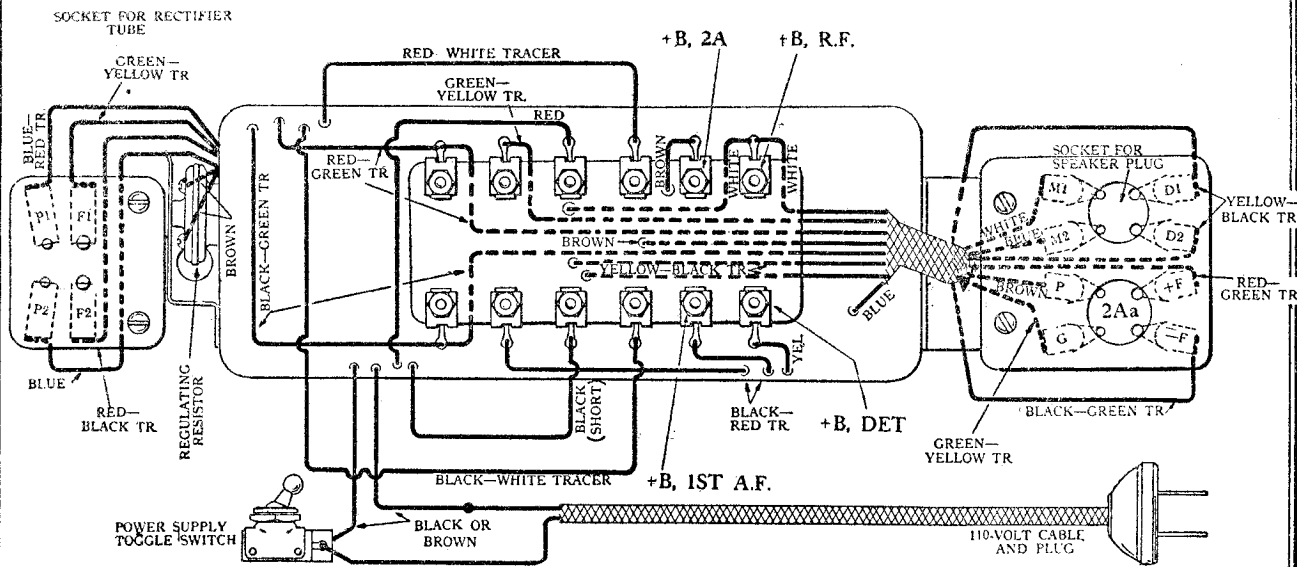
TEST CHART FOR MODEL 43.

MODEL 43
Power Pack
Schematic

ATWATER KENT MFG. CO.



WIRING DIAGRAM OF POWER UNIT IN MODEL 43.



SHOWING CONNECTIONS AND APPROXIMATE POSITION OF LEADS FROM SEALED CONTAINER IN MODEL 43 POWER UNIT. In early type of power unit for Model 43, two brown leads from the primary-shunt condenser connect to the +B, 2A terminal and to the brown P2Aa lead respectively. In later models these connections are made internally.

MODEL 44 and 45

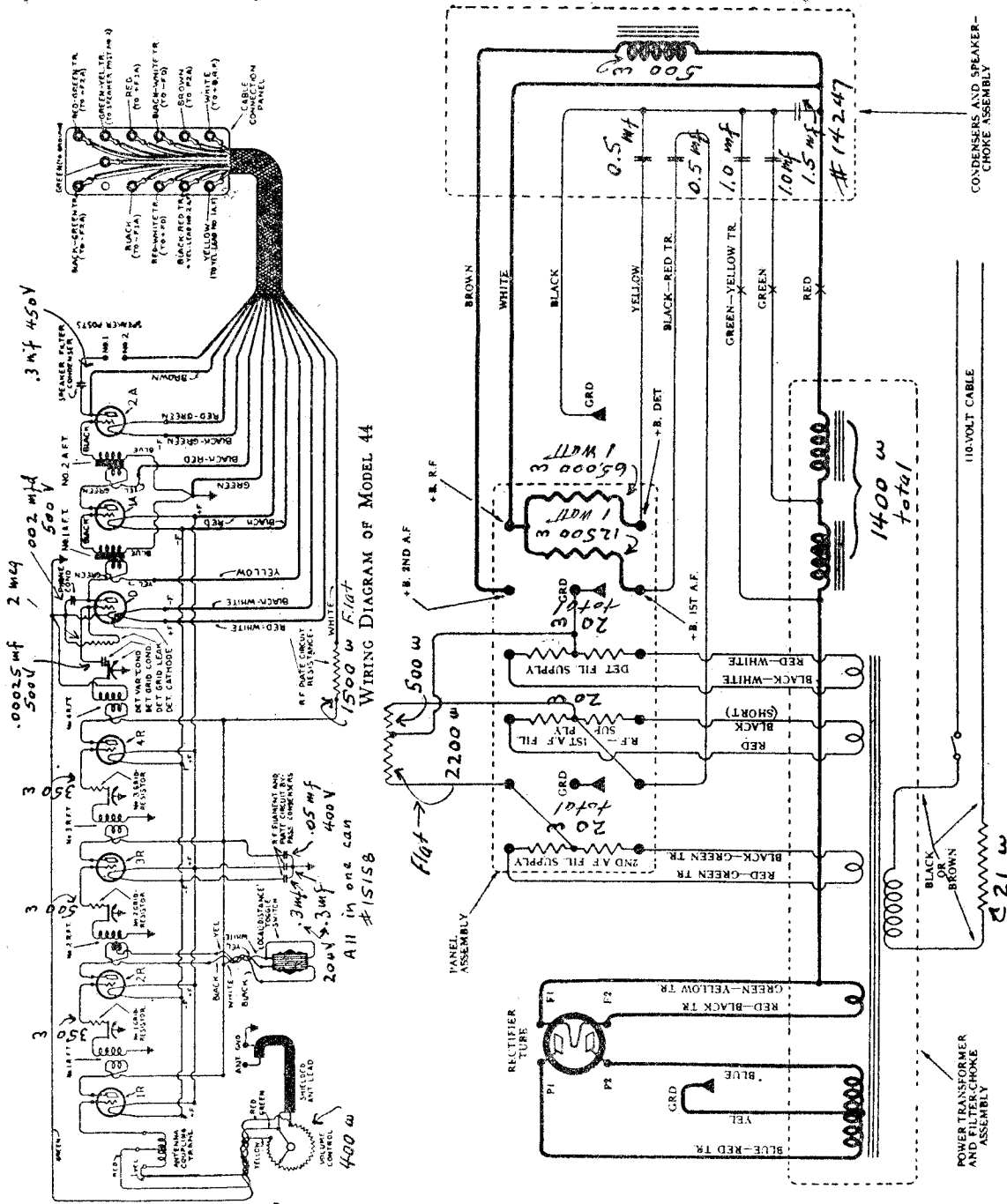
ATWATER KENT MFG. CO.

SPECIAL NOTE.

1st type power unit for Model 44 is shown on page 145. Second type power unit for Model 45 is shown on page 148.

TRANSFORMERS IN MODELS 44 and 45

1st a-f primary 1000 ohms # 8060 2nd a-f primary 1700 ohms # 7661
 1st a-f secondary 7000 ohms 2nd a-f secondary 3250 ohms



WIRING DIAGRAM OF MODEL 44

WIRING DIAGRAM OF 2ND TYPE OF POWER UNIT FOR MODEL 44

Power unit references on pages 1-9 and 1-10.

MODEL 50

ATWATER KENT MFG. CO.

MODEL 50

Model 50

CONDENSERS

Detector grid	.00025 mfd	# 8593	500 volts
Detector phone	.002 mfd	# 8590	500 volts
Plate bypass	.3 mfd	# 14902	450 volts

RESISTORS

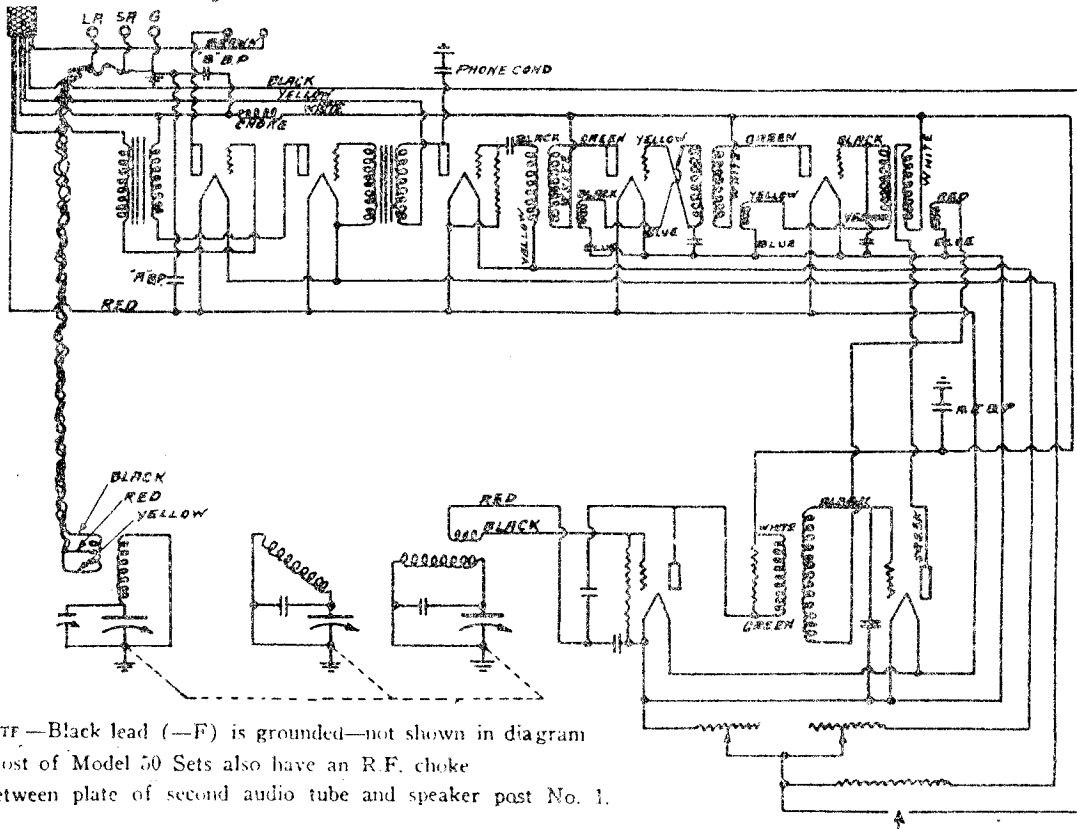
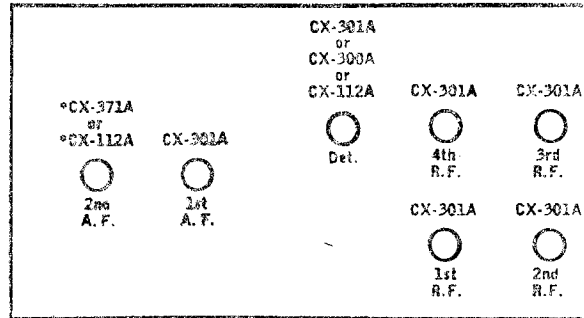
Detector grid leak	2.0 megs	# 15892 (8195)	1 watt
1st r-f plate	12500 ohms	# 8796	yellow glass
A-f filament	1.5 ohms	# 8627	black covered, flexible
Detector rheostat	20 ohms	# 8310	
R-f rheostat	5 ohms	# 8599	
R-f grid leak	2.0 megs	# 15892 (8195)	1 watt

CHOKES

A-f plate	35 ohms	# 8232
-----------	---------	--------

TRANSFORMERS

1st a-f primary	1000 ohms	# 8650
1st a-f secondary	7000 ohms	
2nd a-f primary	1400 ohms	# 8940
2nd a-f secondary	7000 ohms	



NOTE—Black lead (—F) is grounded—not shown in diagram
 Most of Model 50 Sets also have an R.F. choke
 between plate of second audio tube and speaker post No. 1.

WIRING DIAGRAM OF MODEL 50.

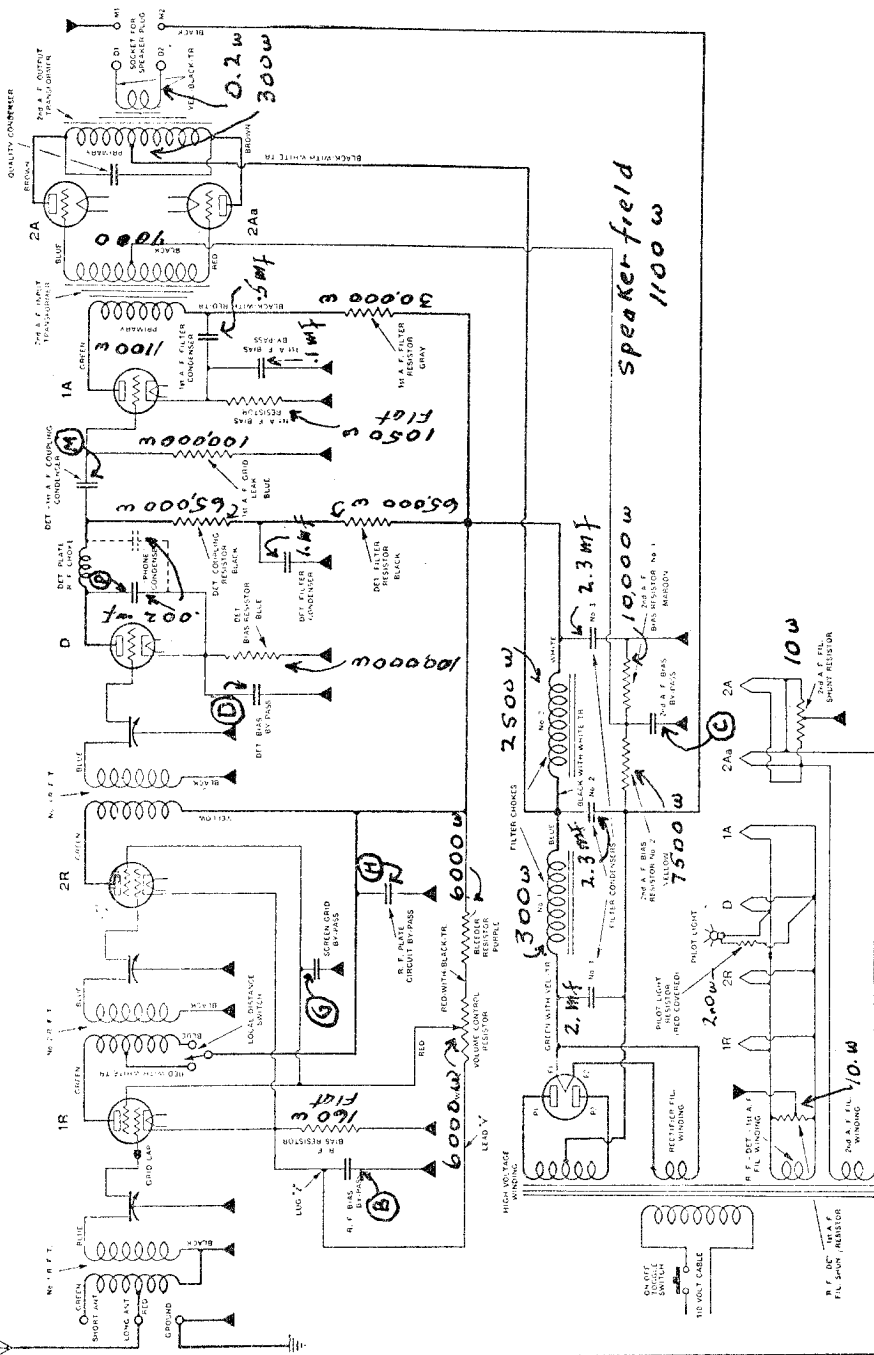
ATWATER KENT MFG. CO.

MODEL 55, 55-C
Early

VOLTAGE TABLE

Tube	Filament		Plate		Grid		Screen	
	Early	Late	Early	Late	Early	Late	Early	Late
R-F	2.2	2.2	160	160	2.8	3.7	78	96
Det	2.2	2.2	101	101	11.	11.		
1st A-F	2.2	2.2	64	69	1.8*	2.8*		
2nd A-F	2.2	2.2	213	230	39.	46		
Rec	4.5	4.5						

* Measured voltage, not operating voltage. Line voltage 110 V.

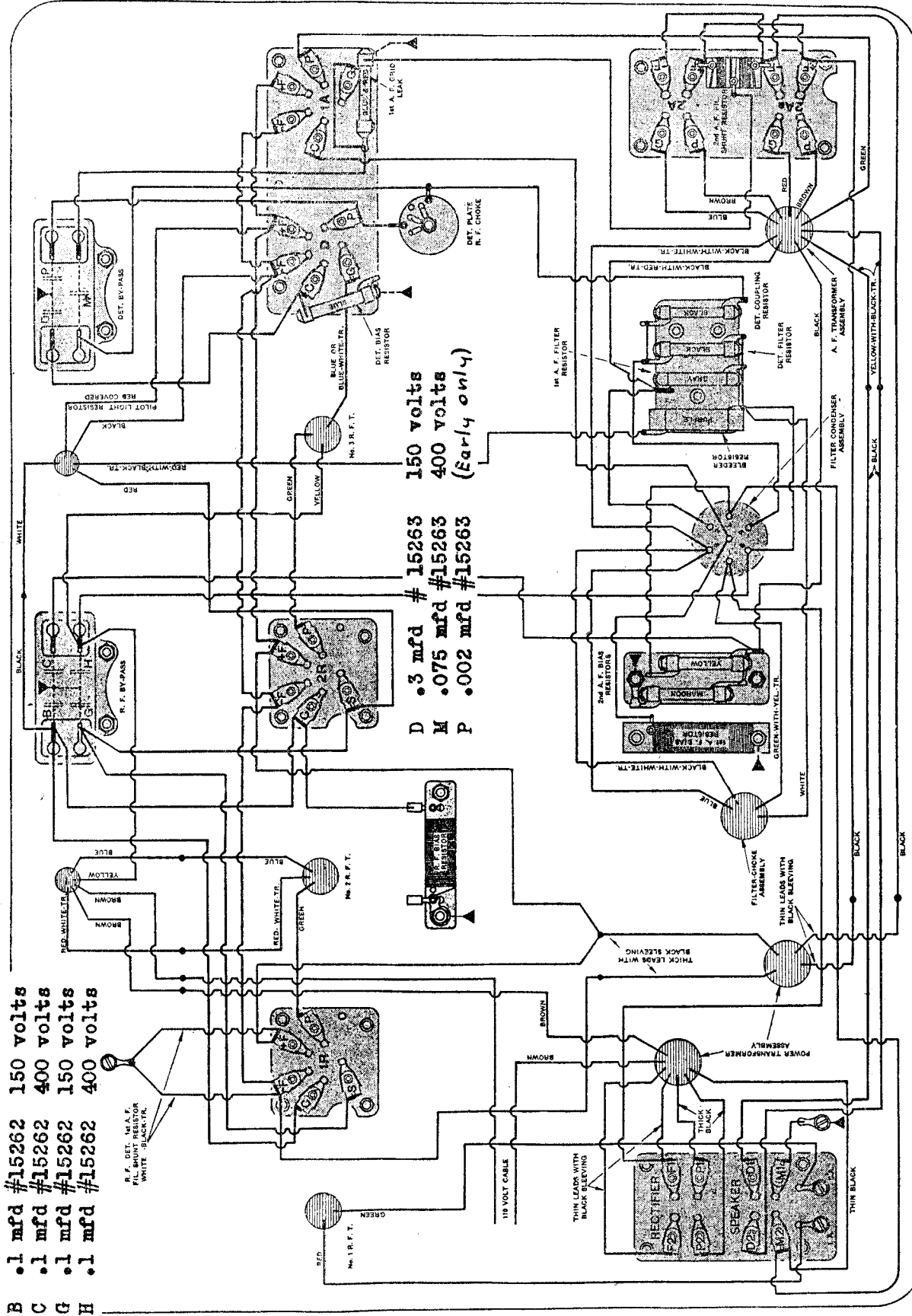


FILTER CONDENSER CONNECTIONS. See chassis
 • These numbers refer to the figures shown within the circle representing the filter condenser can.

- 1st a-f filter .5 mfd connected between centre stud and terminal (3)
- Detector filter 1. mfd connected between terminal (4) and can
- 1st a-f bias .5 mfd connected between centre stud and can
- Filter #1 2.0 mfd connected between terminals (1) and (4)
- Filter #2 2.3 mfd connected between terminals (2) and (4)
- Filter #3 2.3 mfd connected between terminals (6) and can.

MODEL 55, 55-C
Early

ATWATER KENT MFG. CO.



- B .1 mfd #15262 150 volts
- C .1 mfd #15262 400 volts
- G .1 mfd #15262 150 volts
- H .1 mfd #15262 400 volts

R.F. DET. 1st A.F. FIL. MOUNT RESISTOR WHITE BLACK TR.

- D .3 mfd # 15263 150 volts
- M .075 mfd #15263 400 volts
- P .002 mfd #15263 (Early only)

BOTTOM WIRING OF EARLY-TYPE MODEL 55 AND 55-C.
This drawing shows the new-style R. F. bias resistor. In some early sets, a separate double-type phone condenser is used.

ATWATER KENT MFG. CO. MODEL 55 and 55-C Late Schematic Chassis

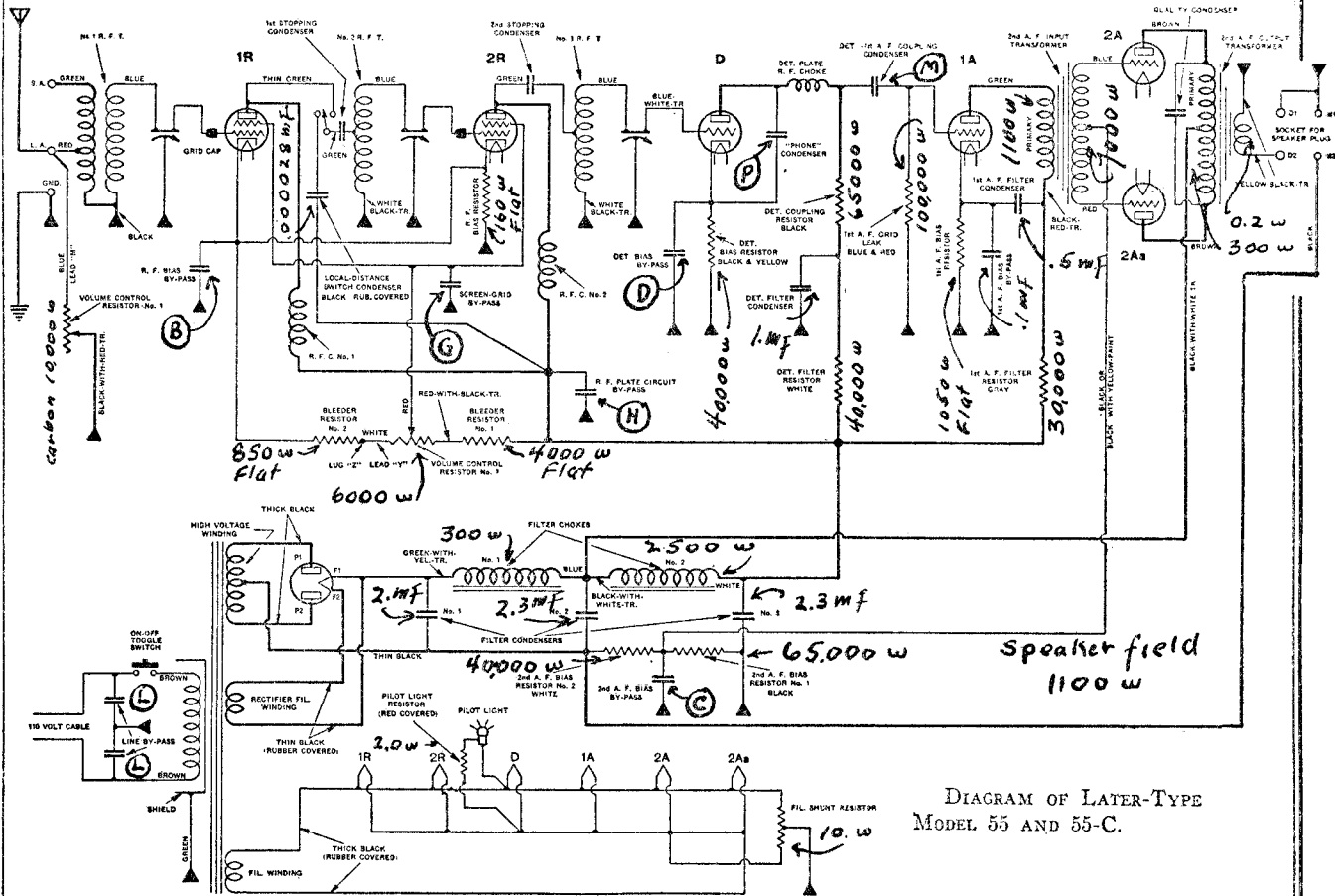
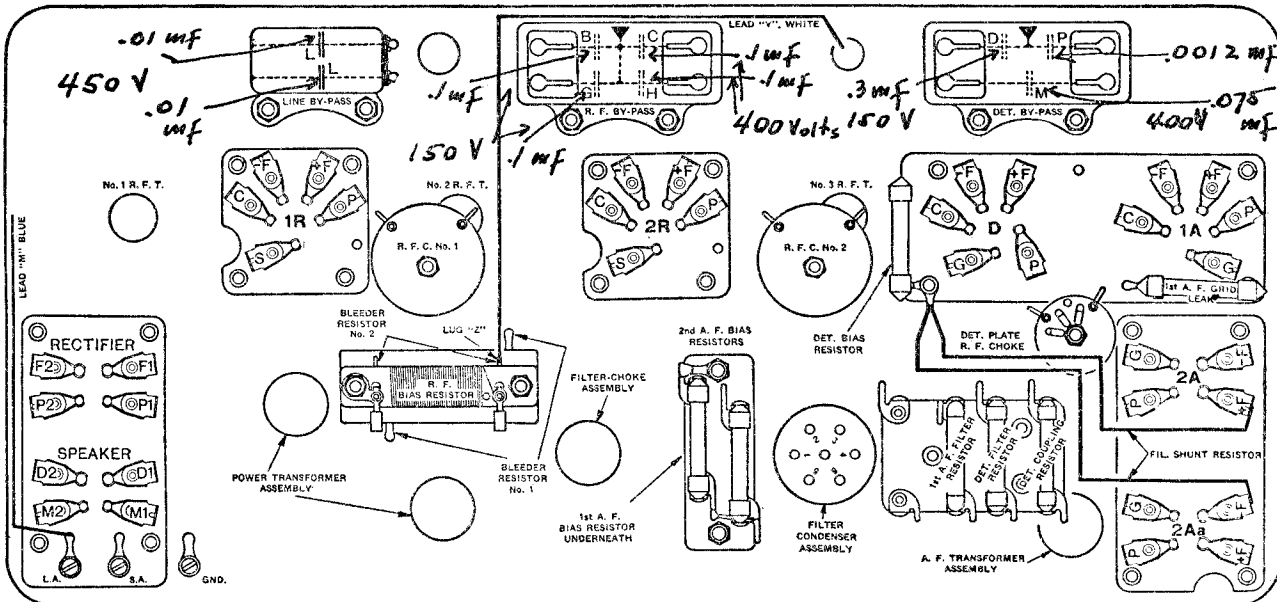


DIAGRAM OF LATER-TYPE MODEL 55 AND 55-C.



BOTTOM CHART OF LATER-TYPE MODEL 55 AND 55-C.

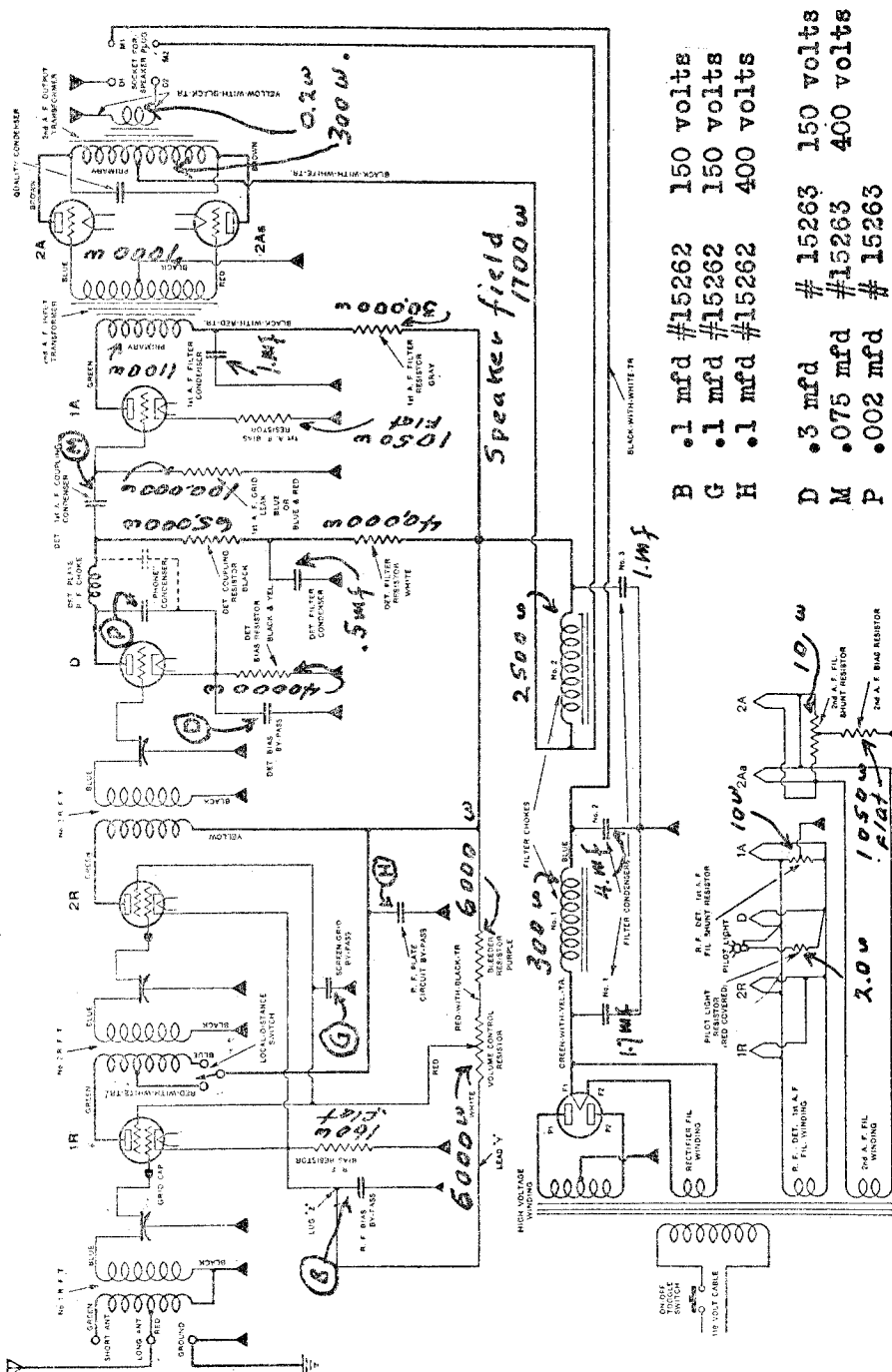
MODEL 55-F and 55-FC
Early

ATWATER KENT MFG. CO.

VOLTAGE TABLE

Tube	Filament	Plate	Grid	Screen
R-F	2.2	160	3.7	96
Det	2.2	101	11.	
1st A-F	2.2	69	2.8*	
2nd A-F	4.5	174	41.	
Rect.	4.5			

* Measured voltage, not operating voltage. Line voltage 110 V.



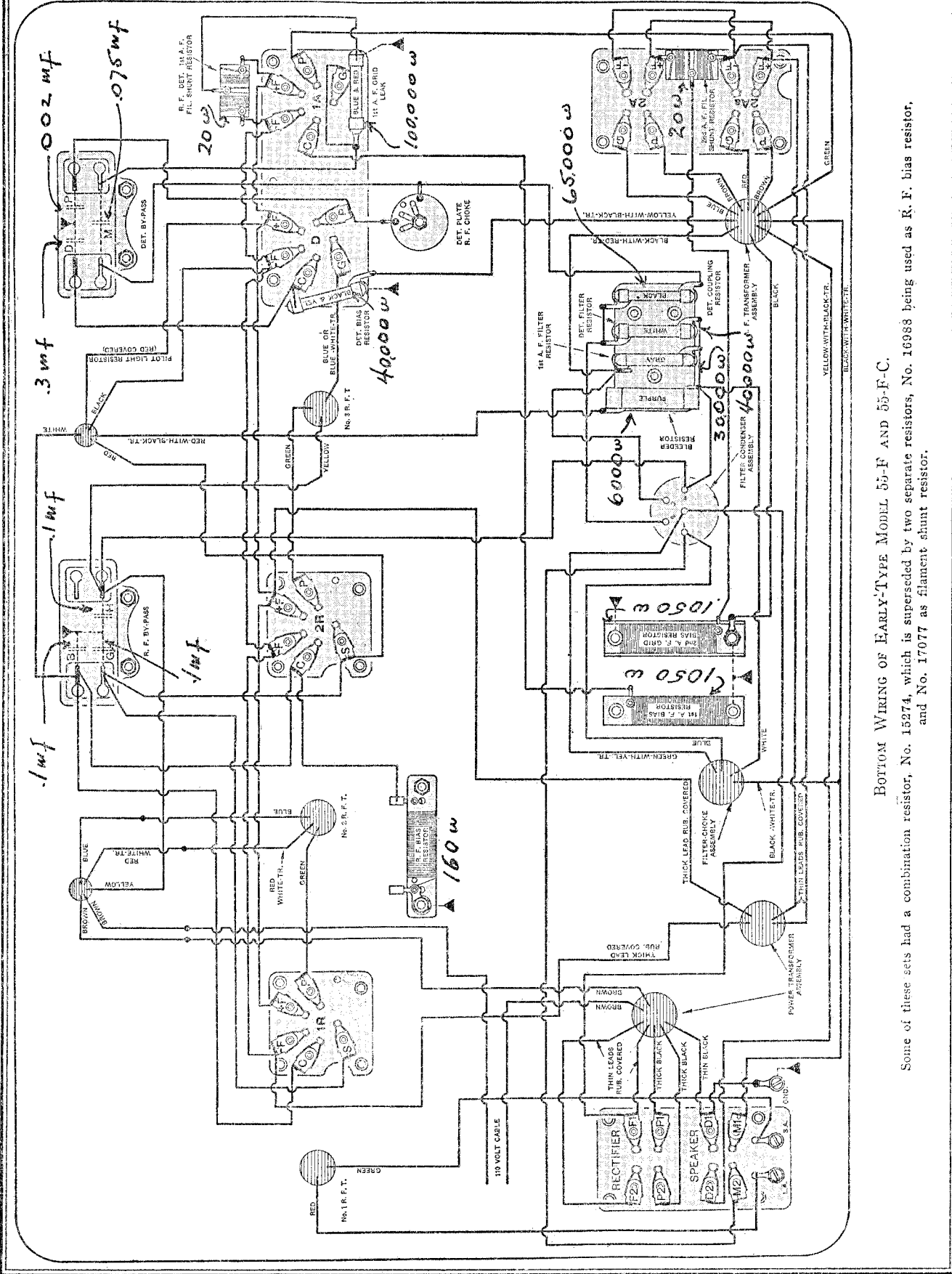
B	.1 mfd	#15262	150 volts
G	.1 mfd	#15262	150 volts
H	.1 mfd	#15262	400 volts
D	.3 mfd	#15263	150 volts
M	.075 mfd	#15263	400 volts
P	.002 mfd	#15263	

FILTER CONDENSER CONNECTIONS. (See chassis layout
The numbers and connections stated are marked upon the filter unit can and are
also shown on the chassis layout within the circle designating the filter con-
denser can.

- Filter #1 1.7 mfd connected between the center stud and can
- Filter #2 4.0 mfd connected between terminal (1) and can
- Filter #3 1.0 mfd connected between terminal (4) and can
- Detector filter .5 mfd connected between terminal (2) and can
- A-f filter 1.0 mfd connected between terminal (3) and can

DIAGRAM OF EARLY-TYPE MODEL
55-F AND 55-F-C.

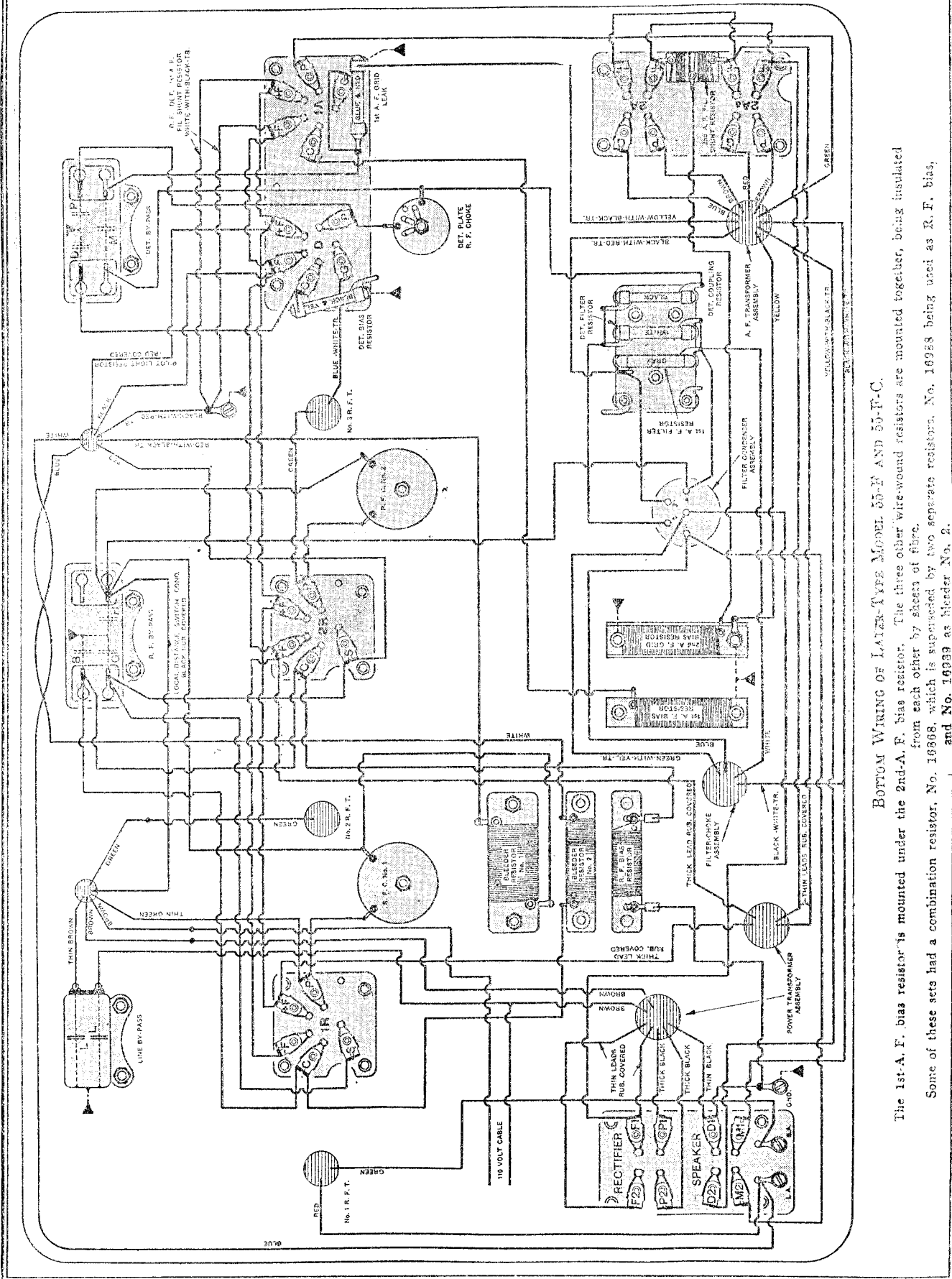
ATWATER KENT MFG. CO. MODEL 55-F and 55-FC Chassis Early



BOTTOM WIRING OF EARLY-TYPE MODEL 55-F AND 55-F-C.

Some of these sets had a combination resistor, No. 15274, which is superseded by two separate resistors, No. 16988 being used as K. F. bias resistor, and No. 17077 as filament shunt resistor.

ATWATER KENT MFG. CO. MODEL 55-F and 55-FC Late Chassis



BOTTOM WIRING OF LATER-TYPE MODEL 55-F AND 55-FC.
 The 1st-A. F. bias resistor is mounted under the 2nd-A. F. bias resistor. The three other wire-wound resistors are mounted together, being insulated from each other by sheets of fibre.
 Some of these sets had a combination resistor, No. 16968, which is superseded by two separate resistors, No. 16988 being used as R. F. bias, and No. 16989 as bleeder No. 2.

ATWATER KENT MFG. CO.

MODEL 60 and 60-C

VOLTAGE DATA FOR MODELS 60 and 60-C (1st and 2nd Types)

Line voltage 110. Tube	Filament	120 volt line is Plate	10 percent higher. Grid	Screen
R-F (1st)	2.2	160	7.3	119 119
R-F (2nd-3rd)	2.2	160	3.7	83
Det.	2.2	101	11.	
A-F (1st)	2.2	69	1.8*	
A-F (2nd)	2.2	230	44.	
Rect.	4.5			

* Measured, not actual operating voltage.

VOLTAGE DATA FOR MODEL 60 and 60-C (3rd Type)

Line voltage 110. Tube	Filament	Volume control at minimum. Plate	Grid	Screen
R-F	2.3	170	16.5*	142
Det.	2.3	119	1.5	
A-F (1st)	2.3	73	1.9**	
A-B (2nd)	2.3	224	36.***	

* Local distance switch at distance

** Measured, not actual operating voltage.

*** If 2nd A-F bias resistor #1 is open, bias will be about 85 v.

Checking Sensitivity of Set

When checking the sensitivity of the set, it is necessary to use an oscillator, and a meter to indicate maximum output volume.

A local oscillator is necessary to ensure constancy of signal strength; signals from broadcast stations are not sufficiently constant for this work.

An output meter is necessary to ensure a reliable indication of output volume; the ear is not reliable enough for this purpose.

The oscillator feeds a weak signal into the receiver. The signal is amplified in the receiver and produces a reading on a meter which is connected to the output of the set. This meter indicates the strength of output volume. The reading on the output meter is greatest when all the tuned circuits

in the set are adjusted to the same frequency as the oscillator signal.

1. Oscillator.

The oscillator must provide modulated R. F. signals at four different frequencies in the broadcast range. These four frequencies should correspond to dial settings of 5, 45, 65 and 95 on the dial of a 3rd type Model 60-C which has the original factory synchronism.

Each of the four R. F. oscillators should have an adjustable pick-up so that the strength of each oscillator may be controlled independently of the other three.

2. Output Measuring Circuit.

The output measuring circuit is shown and described

Adjusting Trimmer Condensers

1. Connect the common pick-up lead from the four R. F. oscillators to one end of a No. 8112 condenser. Connect the other end of this condenser to the Long-Antenna post. Connect the oscillator container to the Ground 5. post.
2. Put plug "A" of the output measuring circuit in the speaker-plug socket on the set. Plug an F-4 type speaker in socket "B." Throw switch "D" to the right.
3. Put all tubes in the set; power switch on; volume control at maximum; local-distance switch at distance. Break away the sealing wax on the trimmer-condenser screws
4. Tune set exactly to 5 on dial. Reduce or increase the

amount of pick-up from the 1st oscillator to secure a reading of about 20 on the output meter.

With a screw-driver, turn the pressure screw of the 4th trimmer condenser one way or the other, as necessary, to the point where the reading on the output meter is greatest. Repeat this process on the 3rd trimmer, then on the 2nd, and finally on the 1st. Reduce the pick-up from the 1st oscillator if necessary in order to keep the needle of the galvanometer near the centre of its scale.

This adjustment of the trimmer-condenser screws is termed the CORRECT POSITION.

ATWATER KENT MFG. CO. MODEL 60 and 60-C Early Schematic

FILTER CONDENSER CONNECTIONS. See chassis layout

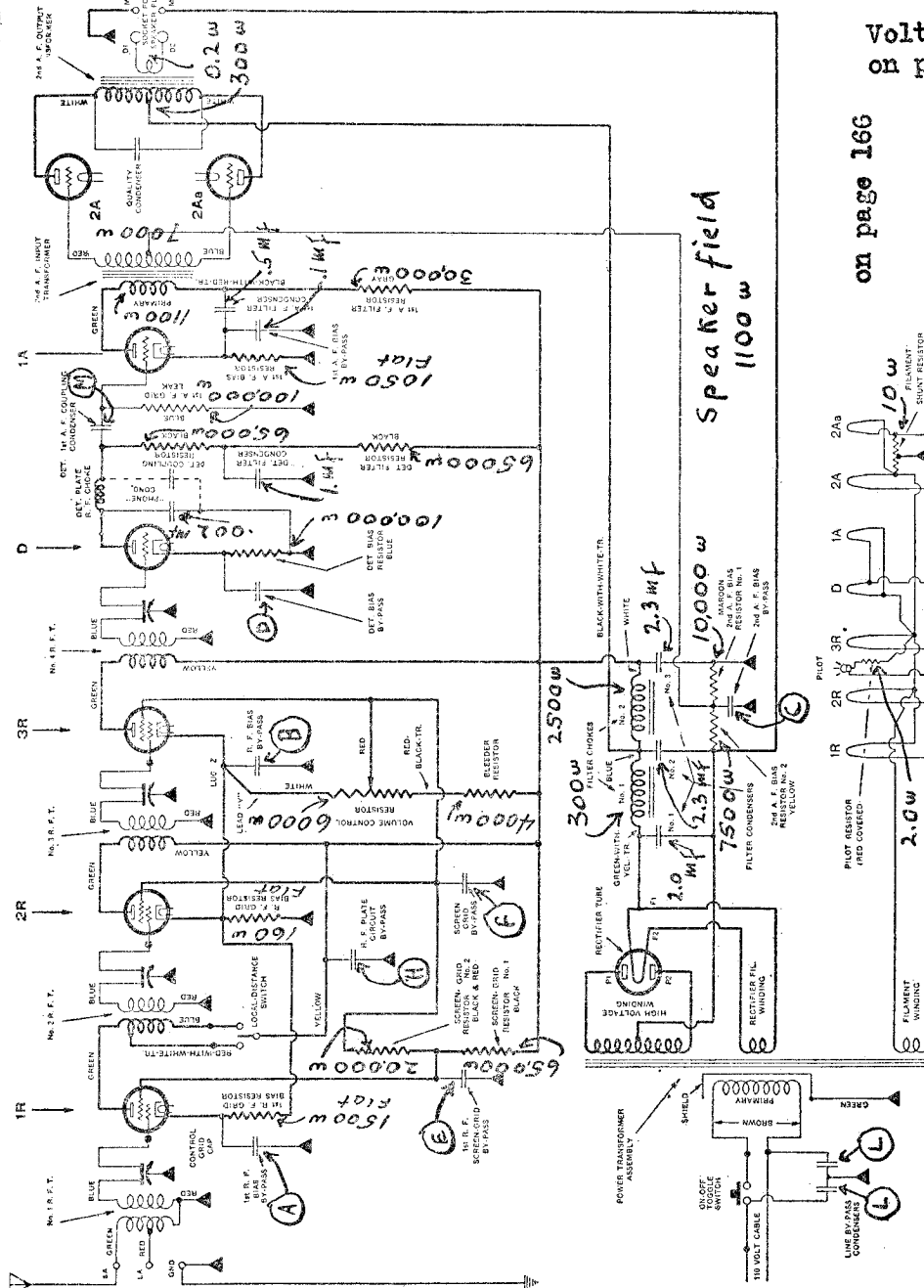
Data

The numbers listed as connections are marked upon the filter condenser unit and shown within the circle designating the condenser unit on the chassis layout.

1st a-f filter	.5 mfd	connected between center stud and terminal (3)
Detector filter	1. mfd	connected between terminal (4) and can
1st a-f bias	.5 mfd	connected between center stud and can
Filter #1	2.0 mfd	connected between terminals (1) and (4)
Filter #2	2.3 mfd	connected between terminals (2) and (4)
Filter #3	2.3 mfd	connected between terminals (6) and can

Voltage data
on page 173

on page 166



BYPASS CONDENSER VALUES. The bypass condensers are designated by letters, exclusive of those within the filter condenser can. For bypass condensers, see schematic above and chassis layout

RF Bypass # 1	A	.1 mfd	150 volts	E	.1 mfd	150 volts
RF Bypass #2	F	.1 mfd	400 volts	H	.1 mfd	400 volts
Detector Bypass	B	.1 mfd	150 volts	C	.1 mfd	150 volts
	L	.01 mfd	400 volts	L	.01 mfd	400 volts
	D	.3 mfd	150 volts	M	.075 mfd	400 volts

EARLY-TYPE MODEL
60 AND 60-C.

MODEL 61,61-C DC
Early
Schematic

ATWATER KENT MFG. CO.

FILTER CONDENSER DATA. The filter condenser unit in the Model 61 and 61-C, (Direct Current) Early, contains two of the filter condensers and two other bypass condensers. The numbers to be quoted in connection with the connections are marked upon the condenser can and are shown upon the chassis layout

- 1st a-f filter .5 mfd connected between terminals (1) and (3)
- Detector filter 1.0 mfd connected between terminals (2) and (6)
- Filter # 2 4.0 mfd connected between terminal (4) and center stud
- Filter # 3 2.0 mfd connected between terminal (5) and center stud

Filter #1 is a part of one of the bypass units as stated elsewhere on this page.

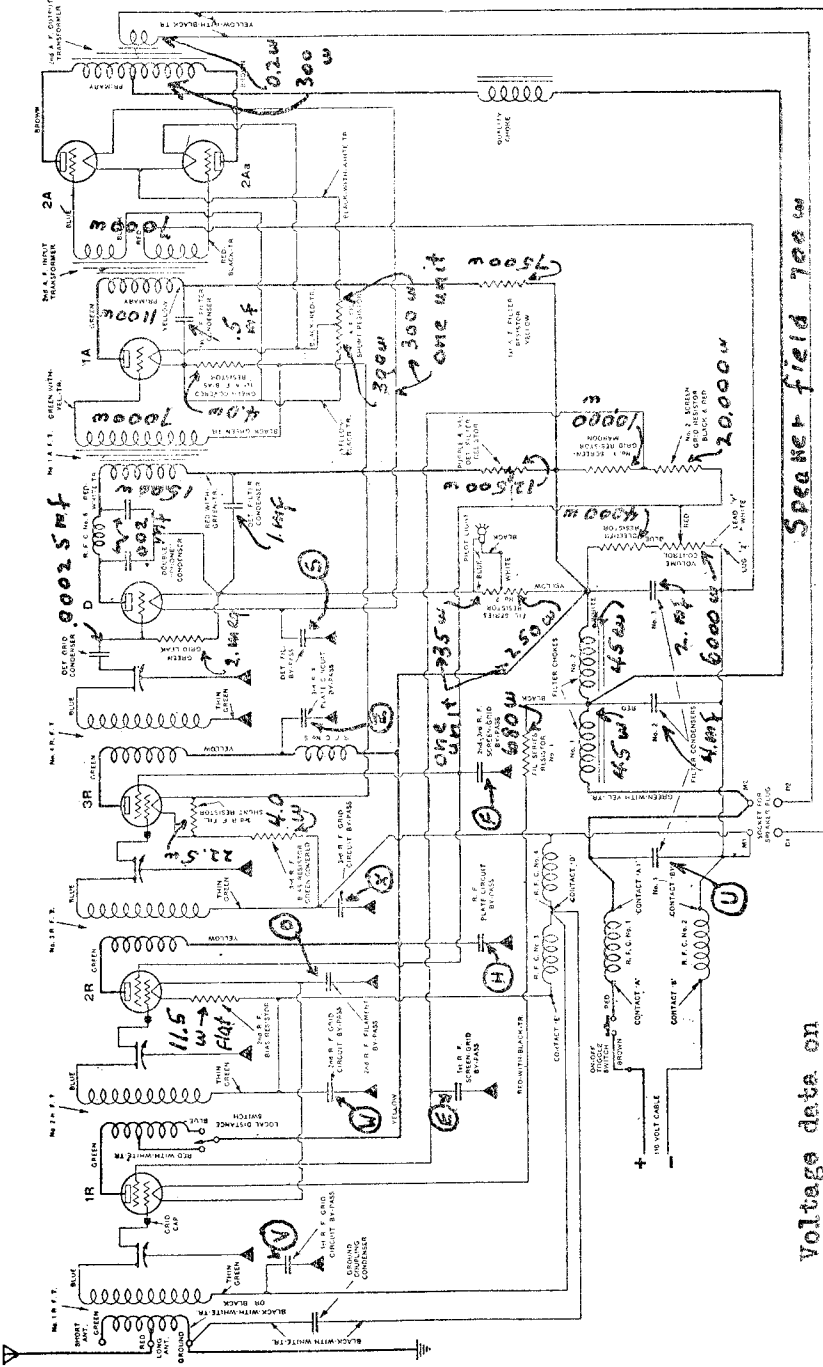


DIAGRAM OF EARLY MODEL 61 AND 61-C (DIRECT CURRENT).

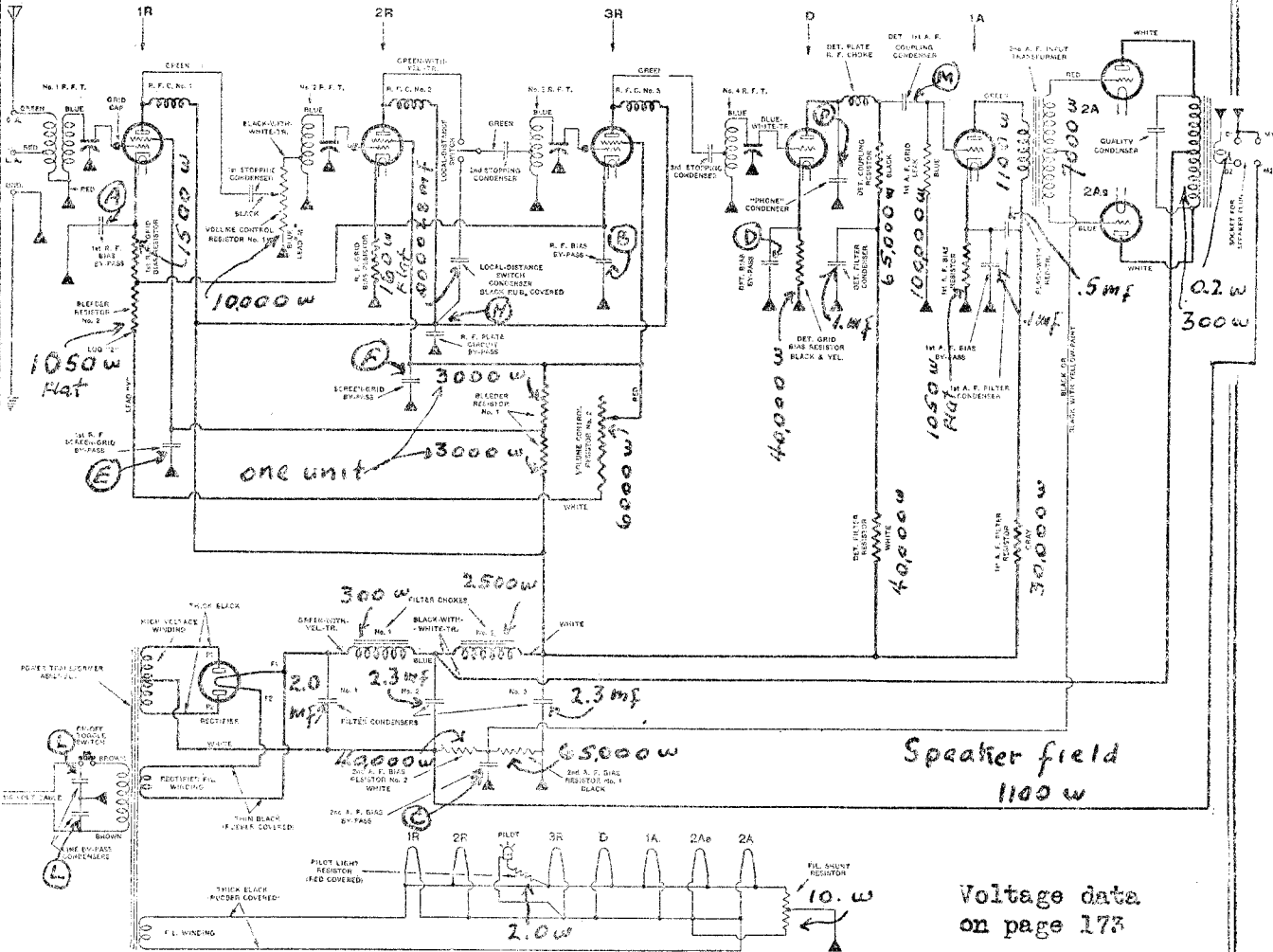
Voltage data on page 176

BYPASS CONDENSERS. The following designating letters are shown upon the schematic wiring diagram and also upon the chassis layout

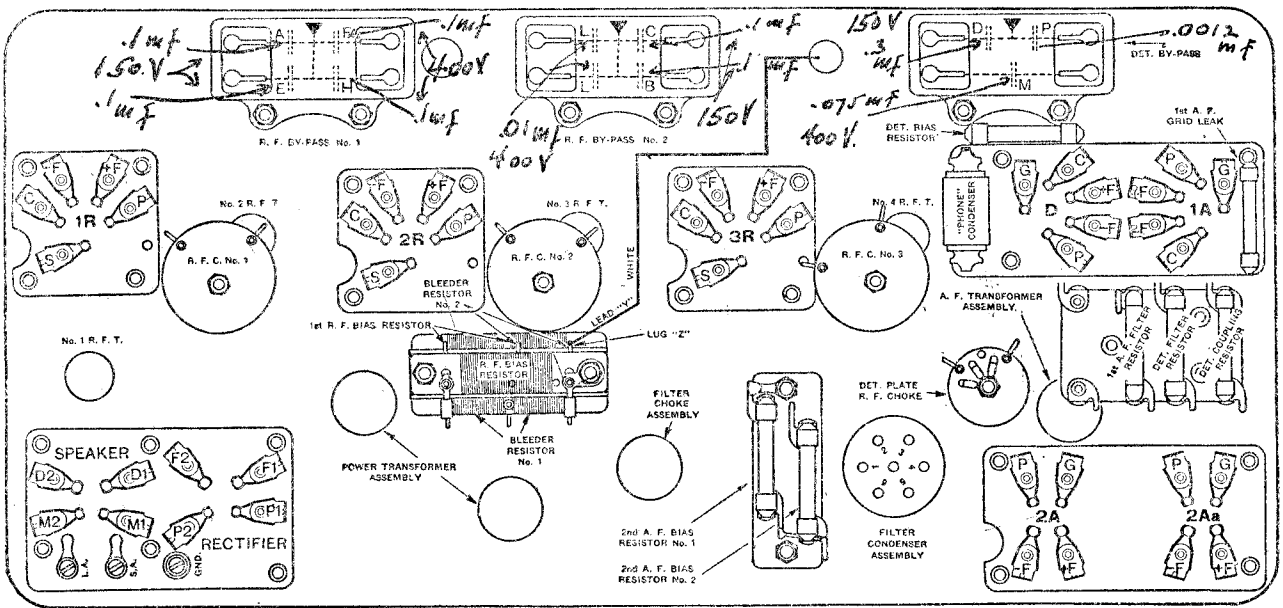
RF Bypass #1	E	.1 mfd	150 volts	O	.1 mfd	400 volts
RF Bypass #2	V	.1 mfd	150 volts	W	.1 mfd	400 volts
	F	.1 mfd	400 volts	H	.1 mfd	400 volts
Detector Bypass	X	.1 mfd	150 volts	Z	.1 mfd	150 volts
#1	S	.3 mfd	150 volts	U*	.075 mfd	400 volts

* Condenser U is Filter #1

ATWATER KENT MFG. CO. MODEL 60 and 60-C Late Schematic



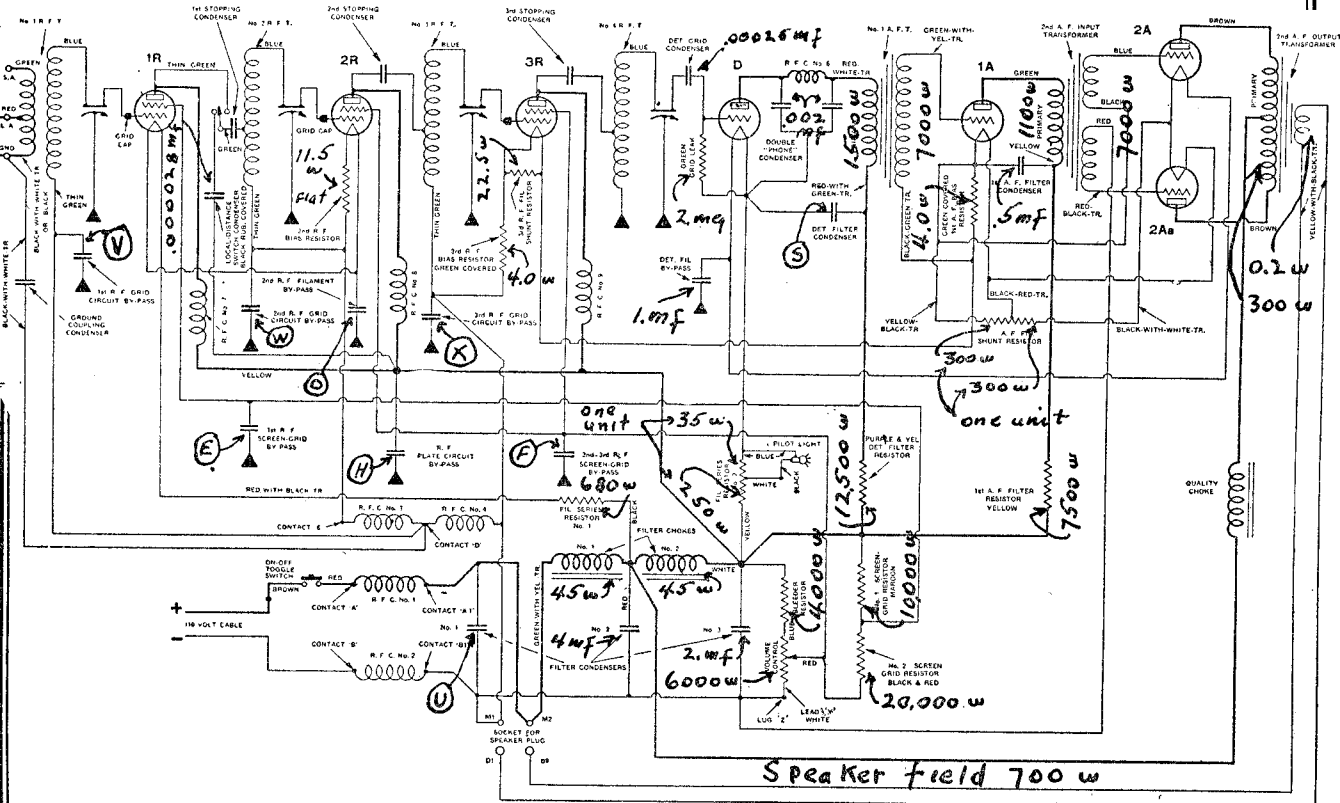
CIRCUIT OF LATER MODEL 60 AND 60-C.



BOTTOM CHART OF LATER-TYPE MODEL 60 AND 60-C.

MODEL 61-61-C
Late Schematic

ATWATER KENT MFG. CO



SCHMATIC DIAGRAM OF LATER MODEL 61 AND 61-C (DIRECT CURRENT).

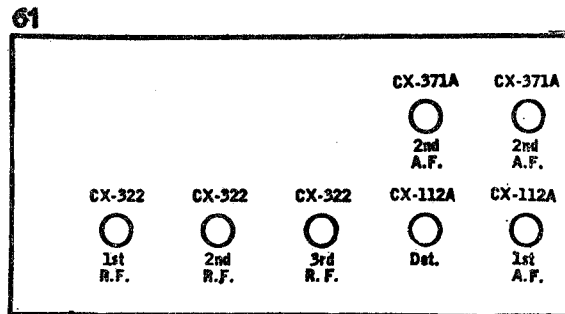
FILTER CONDENSER SPECIFICATIONS are shown on page 174. BYPASS CONDENSER designations shown upon wiring diagram also appear upon chassis layout on page 177. For BYPASS CONDENSER data refer only to page 177 and not to page 174.

	R-F	Det.	1st A-F	2nd A-F
Fil.	2.9	4.6	4.6	4.6
Plate	78	32	50	80
Grid	4.6*		1.4	9
Screen	60**			

* This voltage applies only to the 1st R-F stage. The 2nd R-F bias voltage is 1.4 volts and the 3rd R-F bias voltage is 0.9 volts.

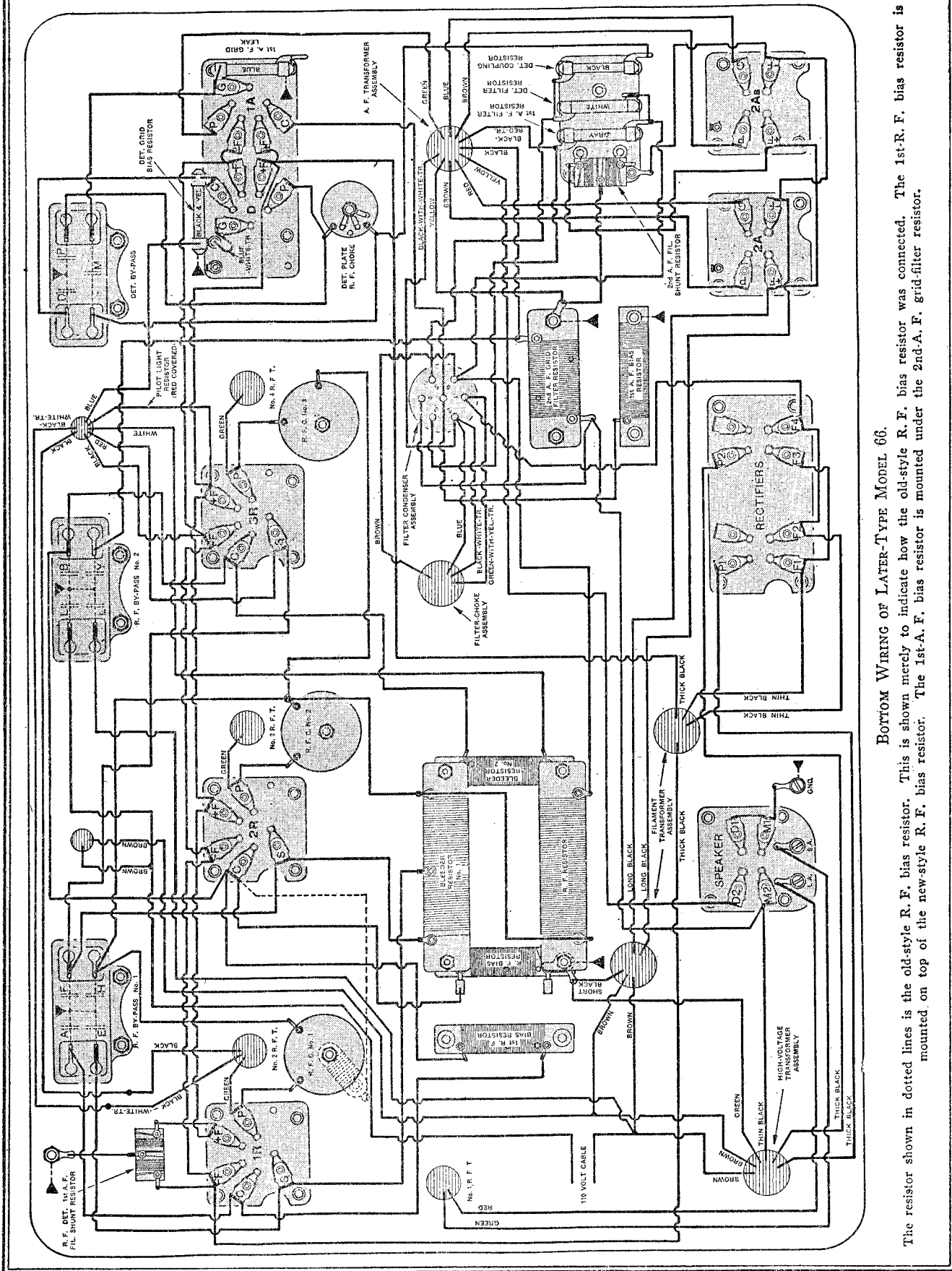
**The screen voltage quoted applies only to the third R-F tube. The other R-F tubes secure different values of screen voltage. R-F tube number 1 or rather the first R-F stage has 46 volts applied to its screen. Likewise the 2nd R-F stage has 46 volts applied to its screen.

The forementioned voltage measurements are made with the volume control adjusted to minimum.



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MODEL 66
Chassis



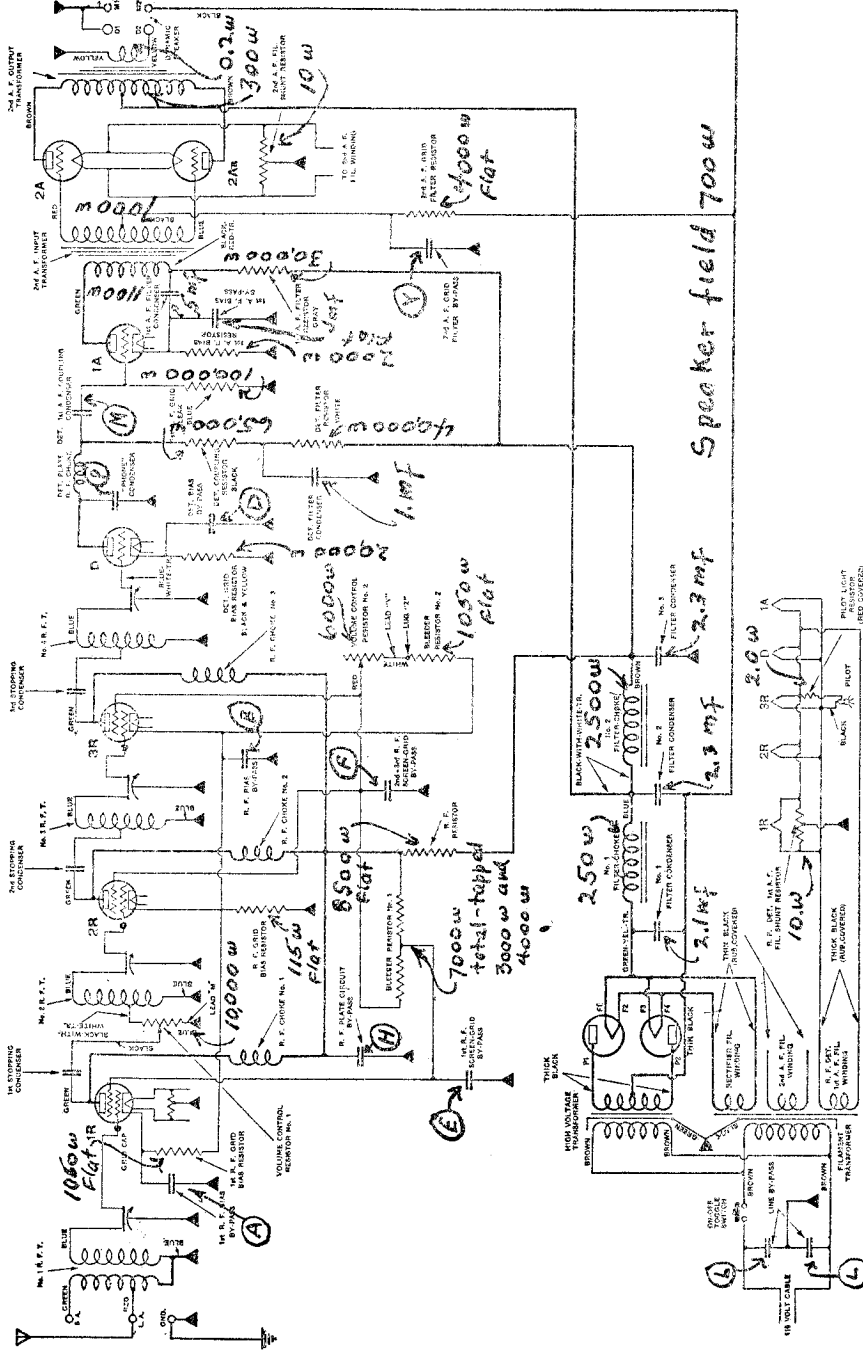
BOTTOM WIRING OF LATER-TYPE MODEL 66.
 The resistor shown in dotted lines is the old-style R. F. bias resistor. This is shown merely to indicate how the old-style R. F. bias resistor was connected. The 1st-R. F. bias resistor is mounted on top of the new-style R. F. bias resistor. The 1st-A. F. grid-filter resistor is mounted under the 2nd-A. F. grid-filter resistor.

MODEL 66
Schematic
Data.

ATWATER KENT MFG. CO

FILTER CONDENSER CONNECTIONS. The following specifications should be used in conjunction with the schematic shown below and the chassis layout shown on **CONDENSER CAN**

- Filter #1 2.1 mfd connected between terminals (1) and (4)
- Filter #2 2.3 mfd connected between terminals (2) and (4)
- Filter #3 2.3 mfd connected between terminal (6) and can
- Detector filter 1.0 mfd connected between terminal (5) and can
- 1st a-f filter 0.5 mfd connected between center stud and can
- 1st a-f bias 0.1 mfd connected between center stud and (3)



CIRCUIT OF MODEL 66.
In some early Model 66, volume control resistor No. 1 is connected across the R. F. choke coil in the plate circuit of the 1st-R. F. tube. The slider of this resistor is connected to a tap on No. 2 R. F. T. through a coupling condenser.

BYPASS CONDENSER VALUES. The letter designations given should be used in conjunction with the schematic wiring diagram above and the chassis layout

RF Bypass #1	A	.1 mfd	150 volts	F	.1 mfd	400 volts
RF Bypass #2	E	.1 mfd	150 volts	H	.1 mfd	400 volts
Detector Bypass	B	.1 mfd	150 volts	L	.01 mfd	400 volts
	Y	.1 mfd	150 volts	L	.01 mfd	400 volts
Detector Bypass	D	.3 mfd	150 volts	M	.075 mfd	400 volts
				P	.0012 mfd	400 volts

ATWATER KENT MFG. CO.

MODEL 67,67-C Early and Late Schematic

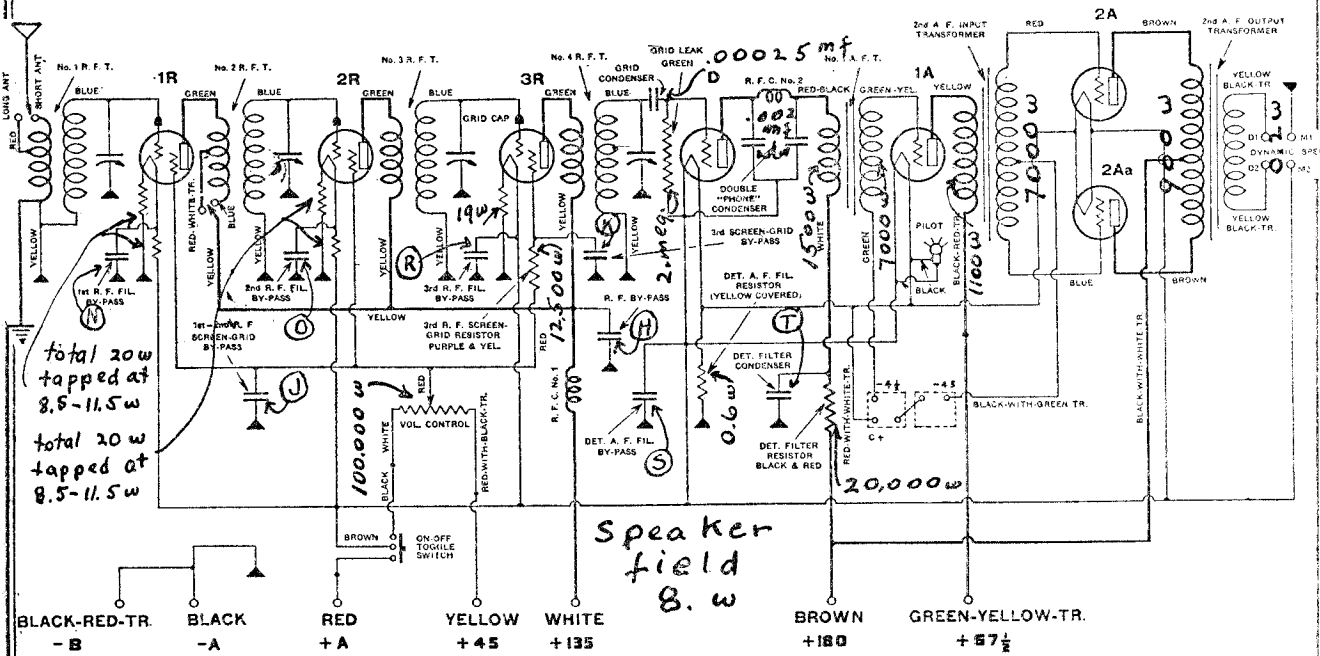


DIAGRAM OF EARLY MODEL 67 AND 67-C (BATTERY OPERATED).

Voltage data on page 180

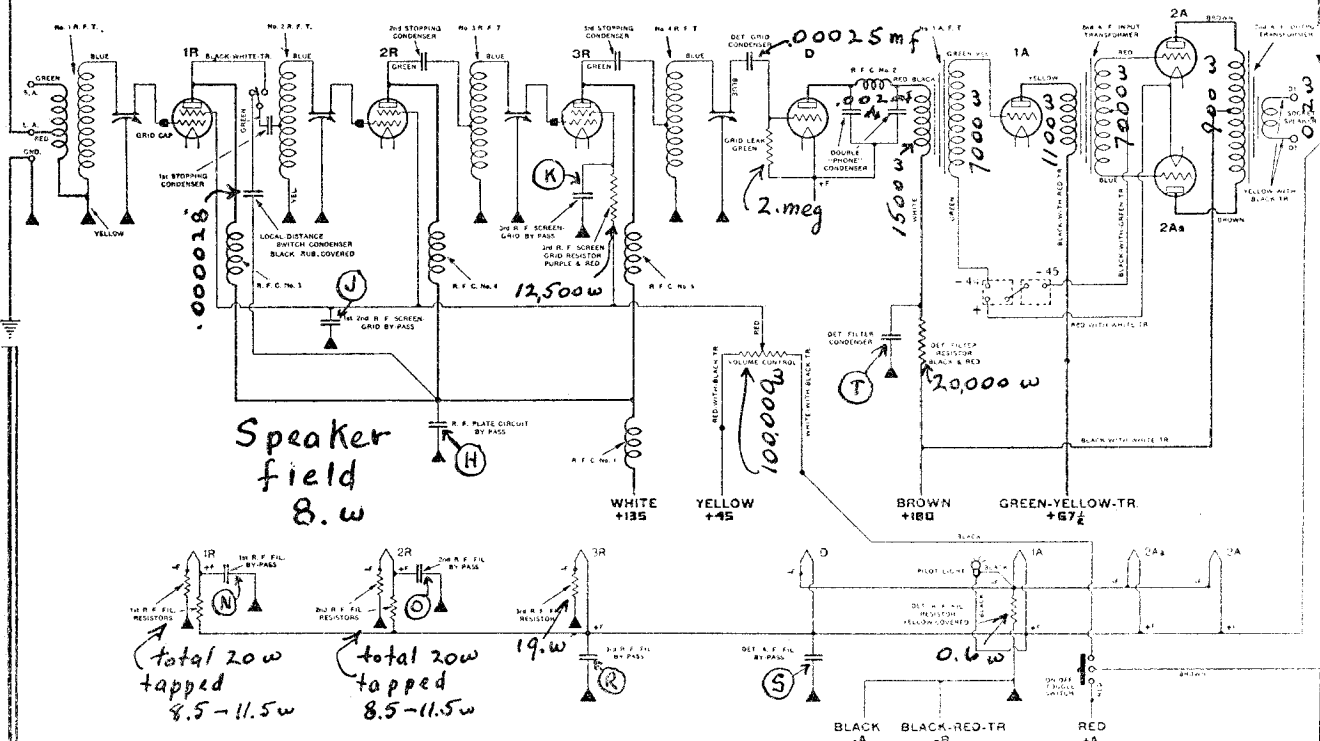


DIAGRAM OF LATER MODEL 67 AND 67-C (BATTERY OPERATED).

MODEL 66 Voltage
 MODEL 67 and 67-C
 Voltage

ATWATER KENT MFG. CO.

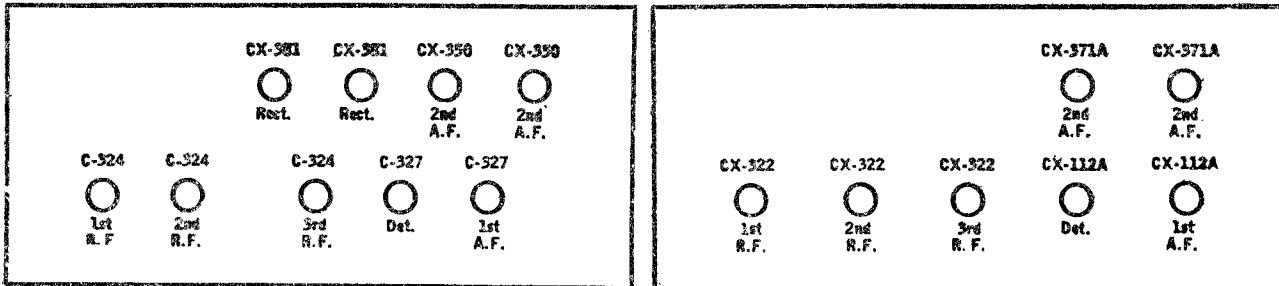
VOLTAGE DATA FOR MODEL 66

Line voltage 110. Line voltage of 120 volts increases voltage 10%.

Tube	Filament	Plate	Grid	Screen
R-F (1st)	2.2	158	5.5	110
R-F (2nd-3rd)	2.2	160	2.8	78
Detector	2.2	206	23.	
A-F (1st)	2.2	137	2.8*	
A-F (2nd)	6.9	412	78.	

* This is the measured voltage, not the actual operating voltage.

66 (A.C.) 67 (Batt.)



VOLTAGE DATA FOR MODELS 67 and 67-C

These values apply when the total "B" voltage is 150 volts.

Tube	Filament	Plate	Grid	Screen
RF (1st-2nd)	3.3	110	1.5	30
R-F (3rd)	3.3	110	2.5	25
Det.	5.0	50	--	
A-F (1st)	5.0	55	4.5	
A-F (2nd)	5.0	150	45.	

These values apply when the total "B" voltage is 180 volts.

Tube	Filament	Plate	Grid	Screen
R-F (1st-2nd)	3.3	135	1.5	45
R-F (3rd)	3.3	135	2.5	40
Det.	5.0	60	--	
A-F (1st)	5.0	65	4.5	
A-F (2nd)	5.0	180	45.	

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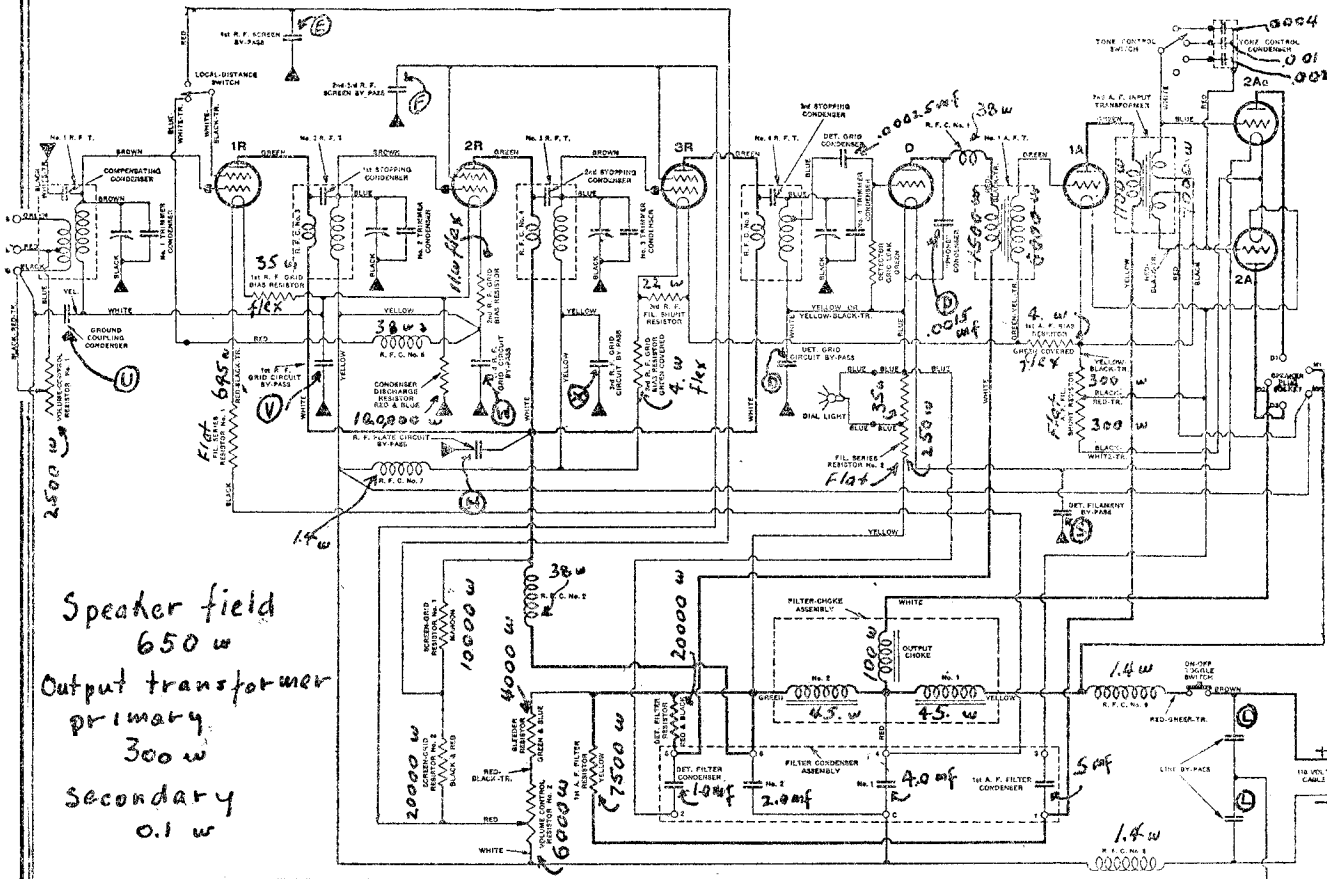
MODEL 70, 74, 76
Chassis D

DIAGRAM OF D-1 CHASSIS.

BYPASS CONDENSERS. The letters within the circles adjacent to the various bypass condensers correspond with the letters shown within the respective bypass units on chassis layout

Note exception stated beneath the following tabulation.

RF Bypass #1	L	.1 mfd	400 volts	L	.1 mfd	400 volts	# 14710
	U	.02 mfd	400 volts				
RF Bypass #2	E	.1 mfd	400 volts	F	.1 mfd	400 volts	# 15262
	V1*	.1 mfd	400 volts	W1*	.1 mfd	400 volts	
RF Bypass #3	H	.1 mfd	400 volts	S	.1 mfd	400 volts	# 16380
	P	.0015 mfd	400 volts				
RF Bypass #4	D	.1 mfd	400 volts	V	.1 mfd	400 volts	# 15262
	X	.1 mfd	400 volts	W	.1 mfd	400 volts	

* Used only in D-2 chassis as shown in wiring diagram of D-2 receiver
 These two condensers are not used in D-1 chassis, but are shown in their proper position in the chassis layout

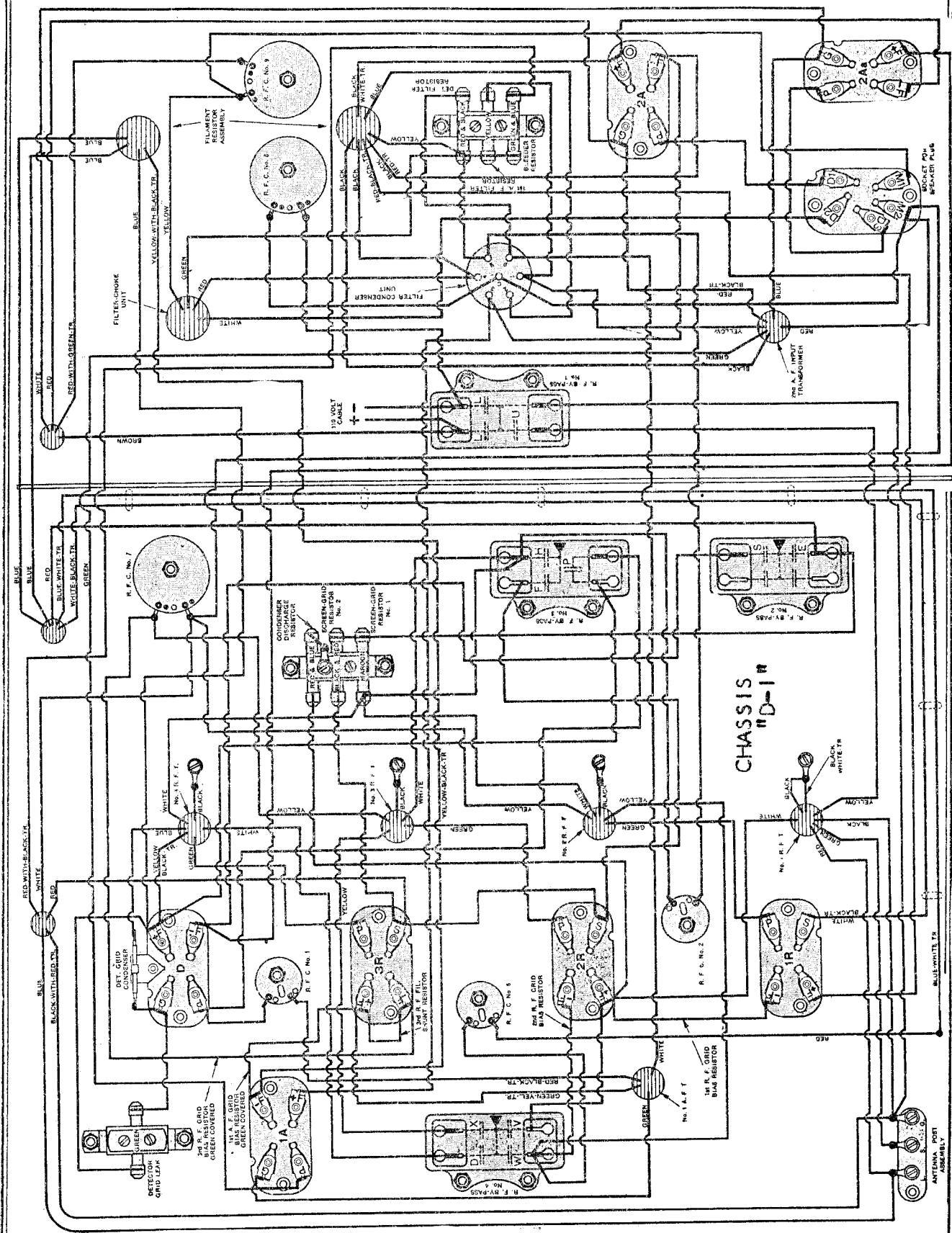
Tone control All condensers are rated at 100 volts

SPECIAL NOTE.

Chassis D-1 and D-2 are identical except for the minor changes noted above in connection with bypass condensers W1 and V1 and also as noted on the D-2 schematic

MODEL 70,74,76
Chassis "D-1"

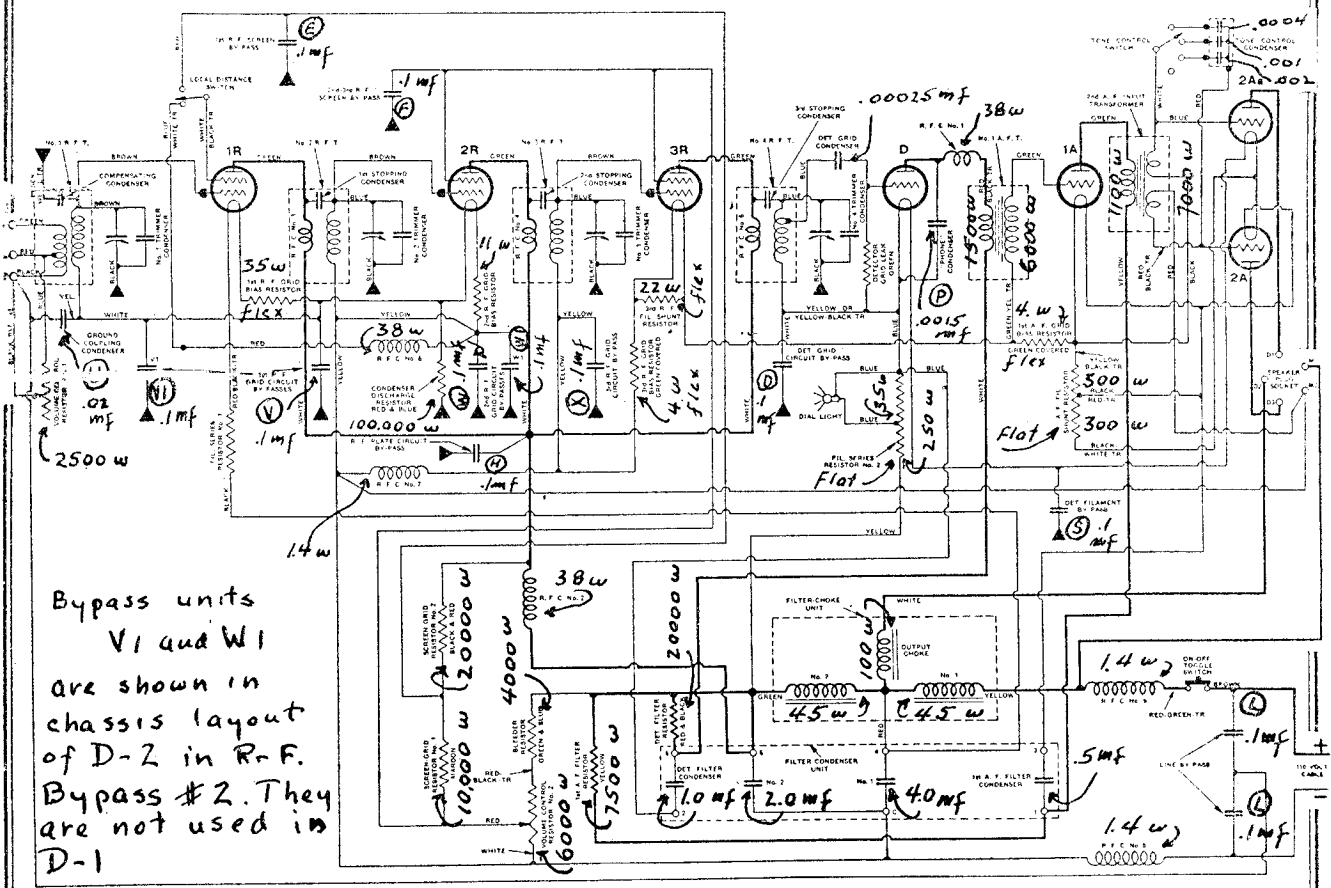
ATWATER KENT MFG. CO.



Voltage data on page 189

Voltage reference on page 1-35.

ATWATER KENT MFG. CO. MODEL 70, 74, 76 Chassis "D-2"



SCHEMATIC DIAGRAM OF TYPE D-2 CHASSIS.

Note the addition of by-pass condensers V-1 and W-1 and the reversal of screen-grid resistors No. 1 and No. 2.

VOLTAGE TABLE FOR TYPE D CHASSIS

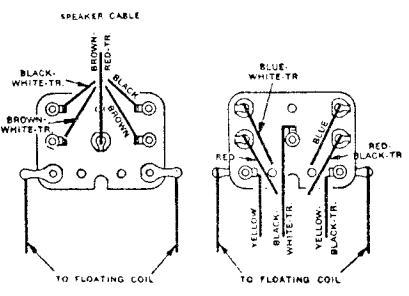
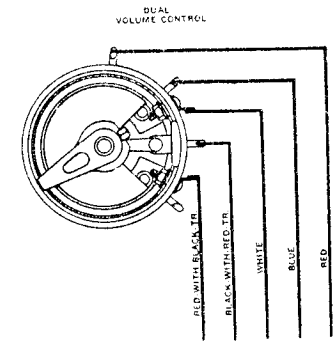
Set in operation. Volume control at maximum.
L-D switch at distance.

Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3.3	75	4.2	60*
2nd-R.F.	3.3	75	1.3	50
3rd-R.F.	3.3	75	1	50
Detector	5	20	—	—
1st-A.F.	5	45	6	—
2A	5	75	10	—
2Aa	5	80	10	—

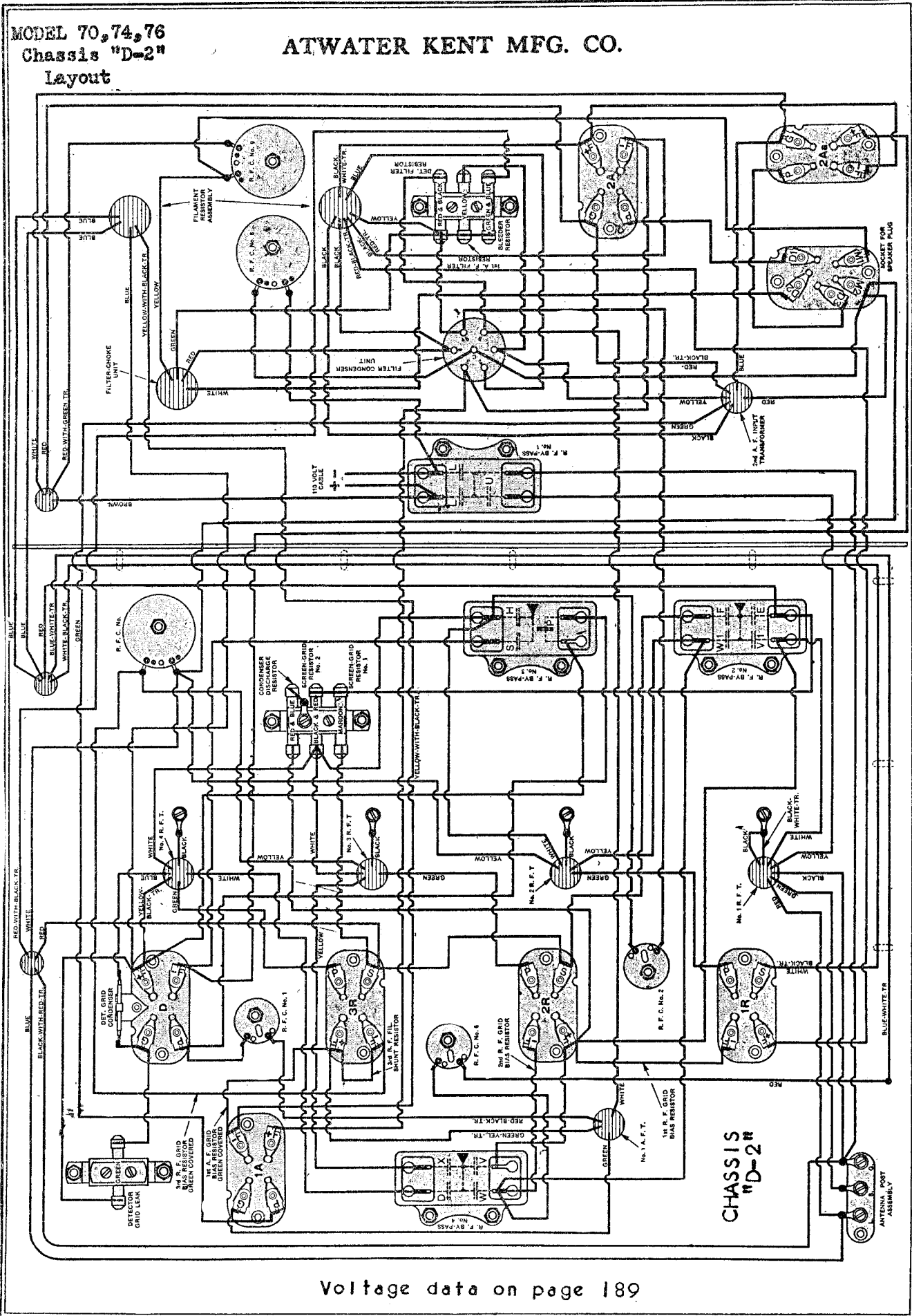
All readings made from cathode in heater-type tubes, and from -F in plain-filament-type tubes.
Use 250-volt scale to measure 2nd A. F. grid voltage.
*This is 50 volts in D-2 chassis.



SPEAKER PANEL CONNECTIONS

MODEL 70, 74, 76
Chassis "D-2"
Layout

ATWATER KENT MFG. CO.

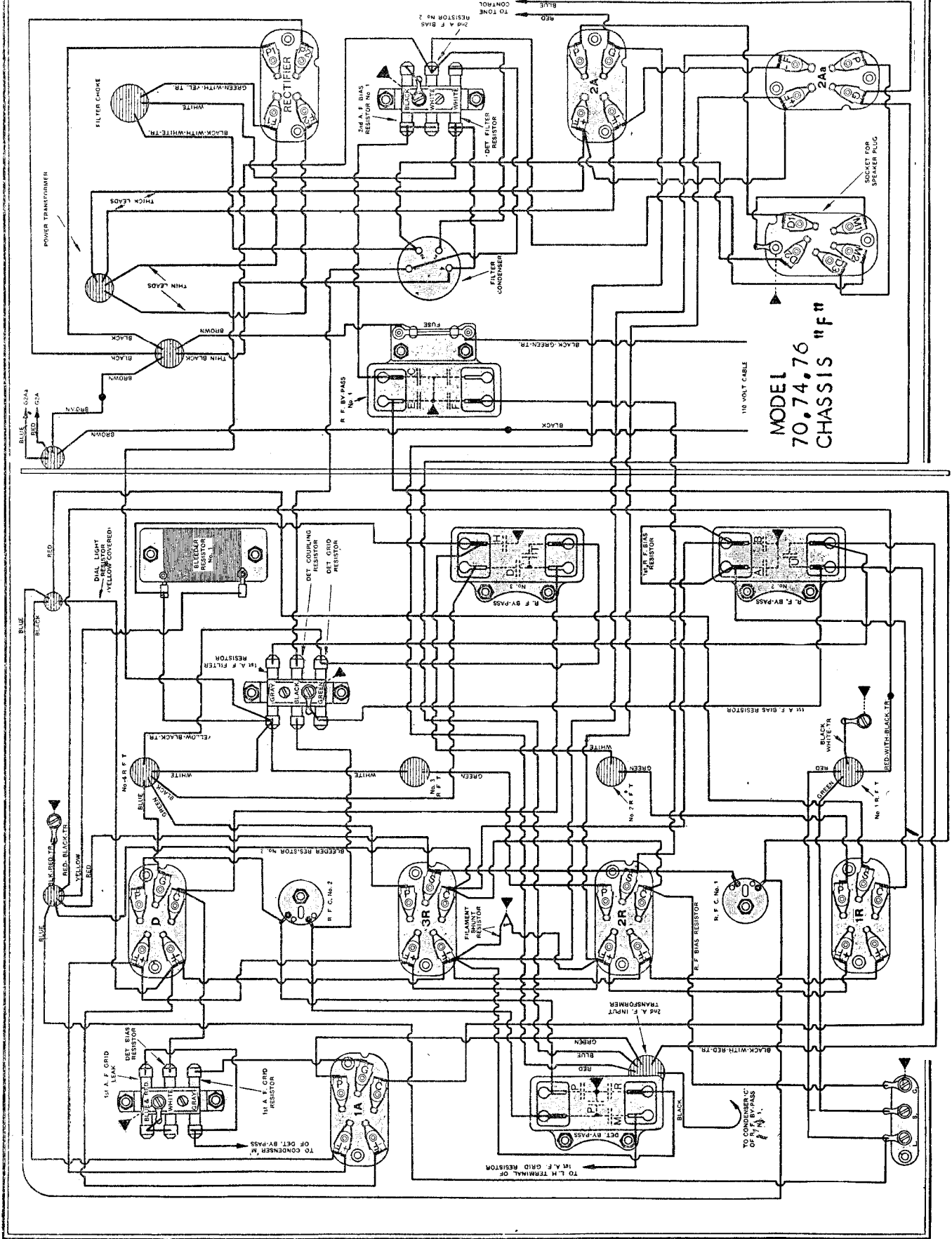


Voltage data on page 189

ATWATER KENT MFG. CO.

MODEL 70, 74 and 76 Chassis "F"

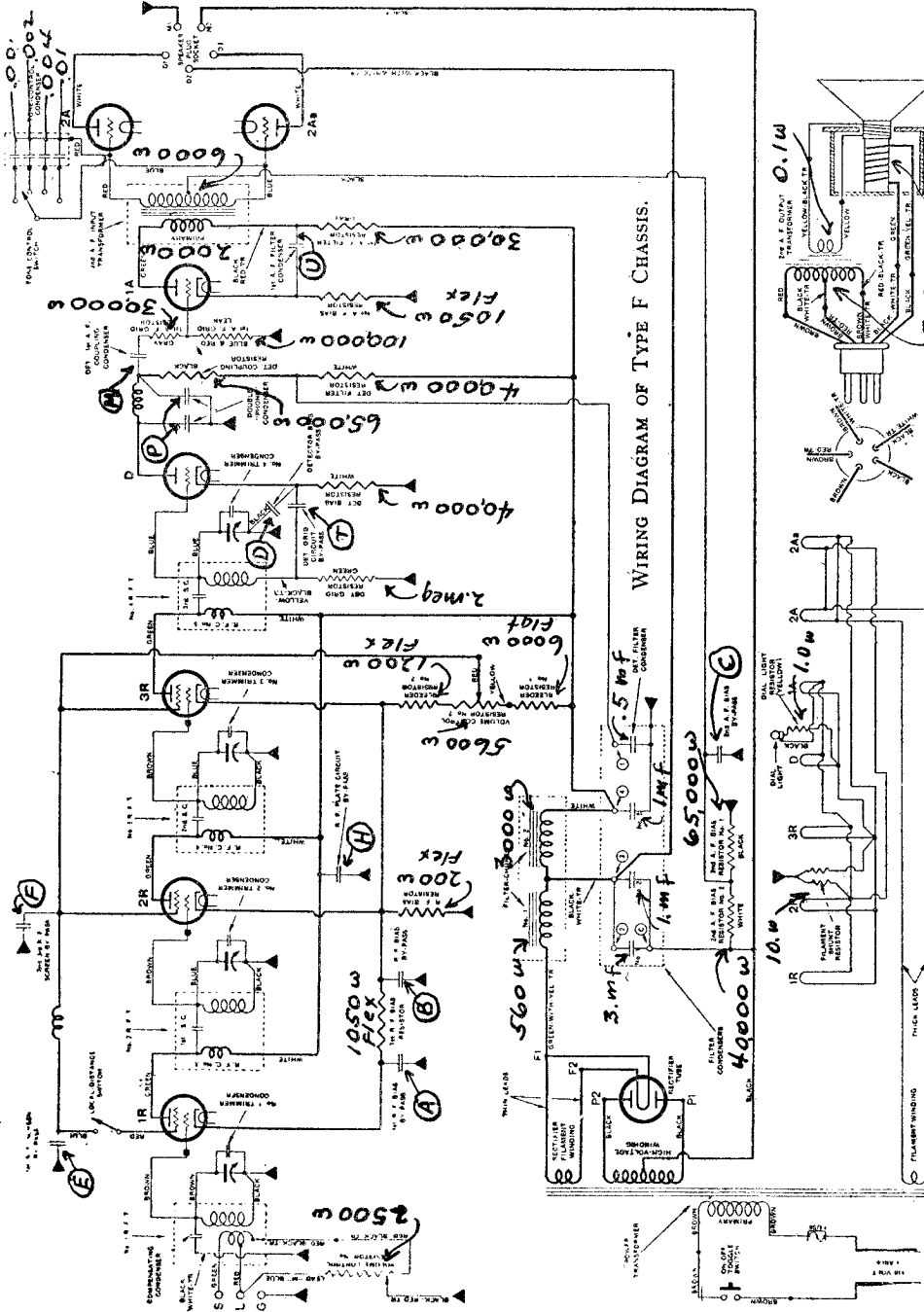
In some early Type F Chassis, a line by-pass condenser is used, and the 1st-A. F. grid resistor (gray) is omitted.



MODEL 70,74,76
Chassis F

ATWATER KENT MFG. CO.

Voltage data on page 136



In some early-type F chassis, a line by-pass condenser is used and the 1st-A. F. grid resistor (gray) is omitted. In later-type F chassis, the filter condenser has only four contacts. A. F. grid leak is connected to the opposite end of the 1st-A. F. grid resistor.

FILTER CONDENSER. In early models, the filter condenser has five contacts as indicated by the numbers within circles in the diagram. For those shown there

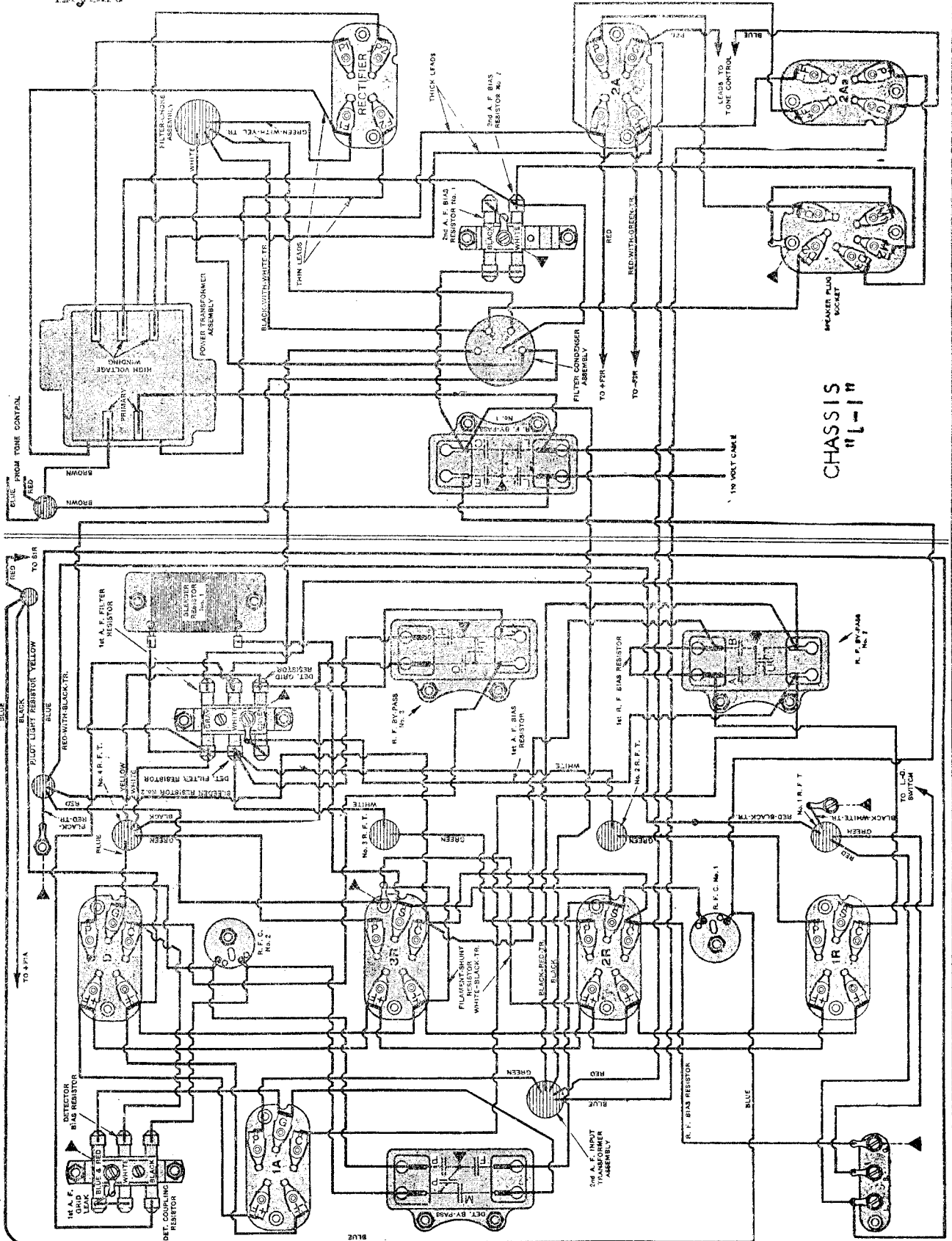
Detector filter .5 mfd connected between terminal (1) and can
 Filter #1 3.0 mfd connected between terminal (2) and center stud
 Filter #2 1.0 mfd connected between terminal (3) and center stud
 Filter #3 1.0 mfd connected between terminal (4) and can

BYPASS CONDENSERS. The letters within the circles correspond with the designations within the bypass units shown in the chassis layout

RF Bypass #1	C	C	.1 mfd	400 volts	E	.1 mfd	400 volts	# 15790
		F	.01mfd	400 volts	(In very early F "F" is .1 mfd.)			
RF Bypass #2	A	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
		B	.1 mfd	150 volts				
RF Bypass #3	D	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
		T	.04 mfd	400 volts				
Detector Bypass	R	R	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
		P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers are rated at 100 volts							

MODEL 70, 74, 76
Chassis "L-1"
Layout

ATWATER KENT MFG. CO.



CHASSIS "L-1"

MODEL 70, 74, 76
Chassis L-1

ATWATER KENT MFG. CO.

BYPASS CONDENSERS. The letters within the circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	#15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers rated at 100 volts						

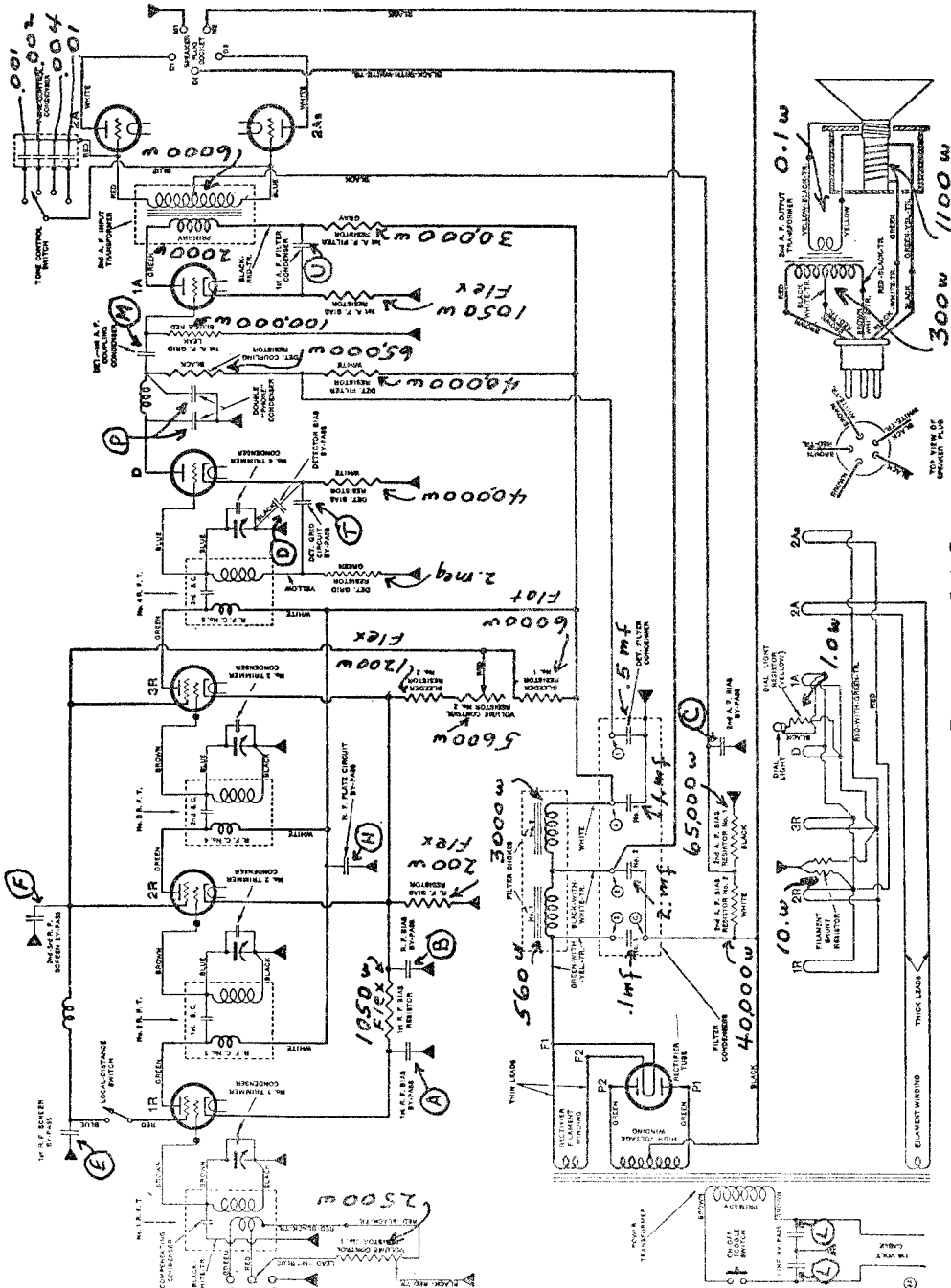


DIAGRAM OF L-1 CHASSIS.

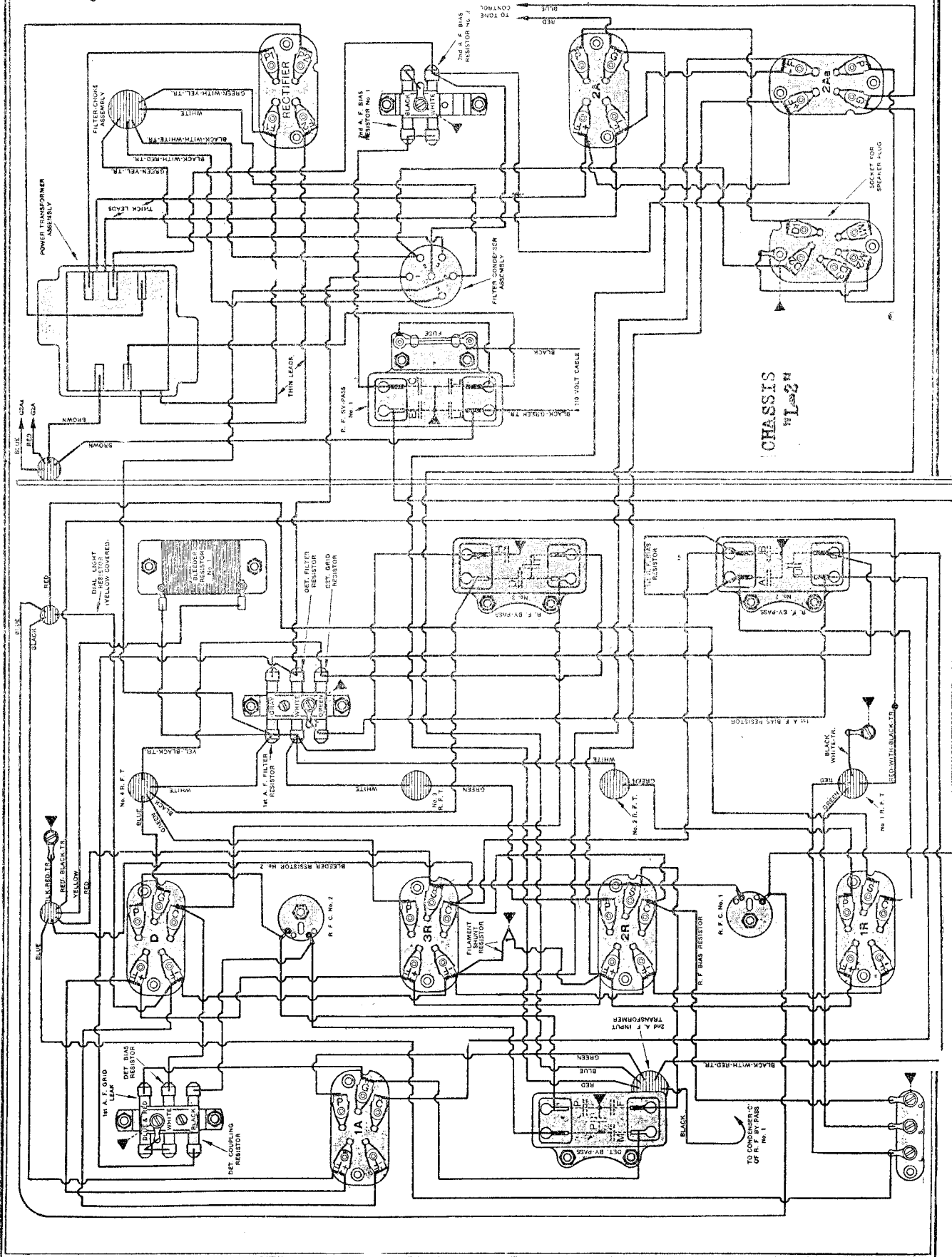
FILTER CONDENSERS

Numerals within circles adjacent to filter condensers designate connections upon condenser can terminal block. These numbers are also shown upon the chassis layout

- Detector filter .5 mfd connected between terminal (1) and can
- Filter #1 .1 mfd connected between terminal (3) and center stud
- Filter #2 2.0 mfd connected between terminal (2) and center stud
- Filter #3 1.0 mfd connected between terminal (4) and can

MODEL 70,74,76
Chassis "L-2"
Layout

ATWATER KENT MFG. CO.



MODEL 76

ATWATER KENT MFG. CO.

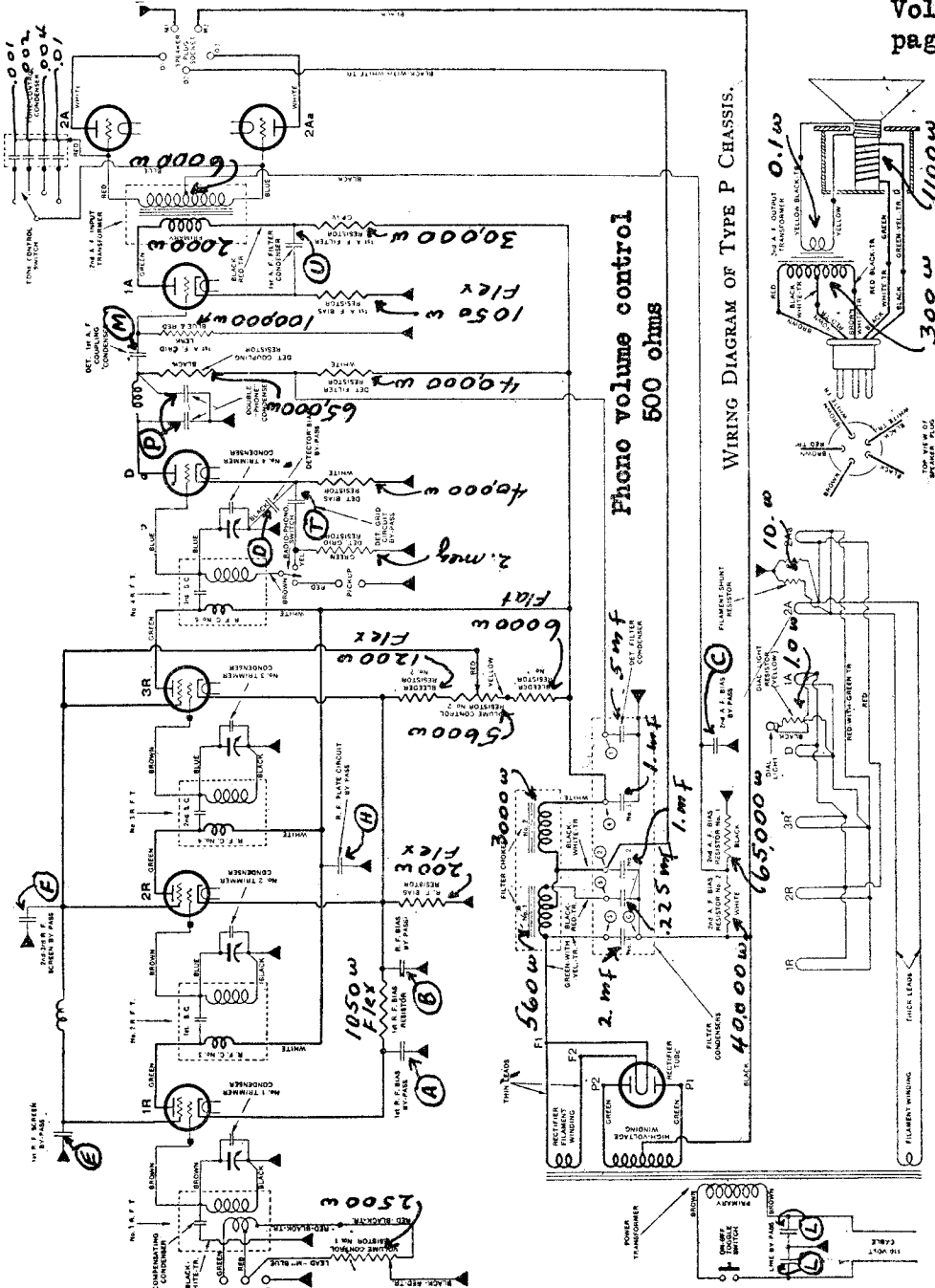
Chassis P

BYPASS CONDENSERS. The letters within circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF. Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	

Tone Control All condensers are rated at 100 volts

Voltage data on page 194



WIRING DIAGRAM OF TYPE P CHASSIS.

FILTER CONDENSERS. Numerals in circles designate connections upon filter condenser terminal block.

- Detector filter .1 mfd connected between terminal (1) and can
- Filter #1 2.0 mfd connected between terminal (2) and center stud
- Filter #2 1.0 mfd connected between terminal (3) and center stud
- Filter #3 1.0 mfd connected between terminal (4) and can
- Resonant condenser .225 mfd connected between terminal (5) and center stud

MODEL 70, 74, 76

ATWATER KENT MFG. CO.

Chassis "L-2" and "P"

Voltage Data

Notes

VOLTAGE TABLE FOR TYPE L-2 AND P CHASSIS

Set in operation. Volume control at maximum.
L-D (or 'phono) switch up.

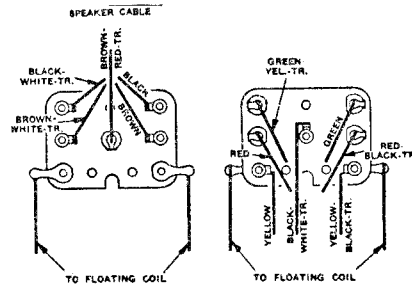
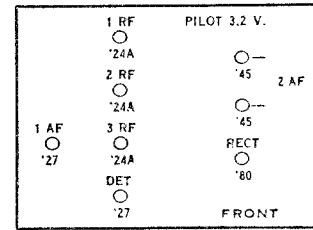
Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

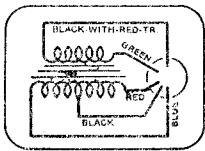
TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	2.4	180	5	85
2nd-R.F.	2.35	180	4.5	86
3rd-R.F.	2.35	180	4.5	86
Detector	2.35	110	14**	—
1st-A.F.	2.35	70	2	—
2A	2.45	250	55*	—
2Aa	2.45	250	55*	—
Rectifier	5.	—	—	—

* Use 250-volt scale.
** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2.
All readings made from cathode in heater-type tubes, and from —F in plain-filament-type tubes.

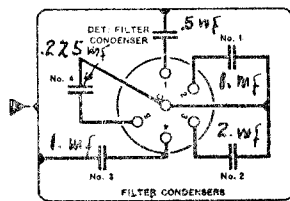
Models 75P, 70, 74, 76, 60 (3rd type) (1930)



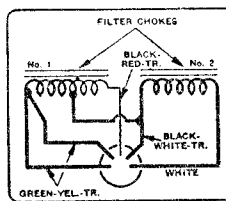
SPEAKER PANEL CONNECTIONS



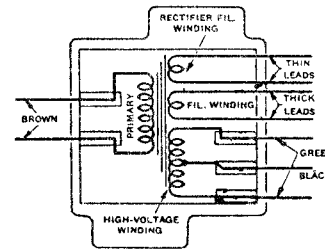
INPUT A. F. TRANSFORMER ASSEMBLY



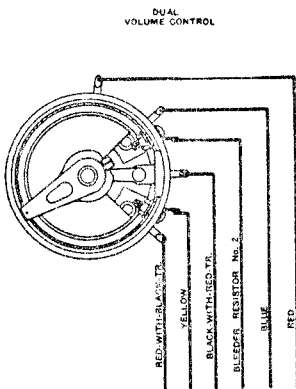
FILTER CONDENSER ASSEMBLY



FILTER-CHOKES ASSEMBLY



POWER TRANSFORMER ASSEMBLY



DUAL VOLUME CONTROL



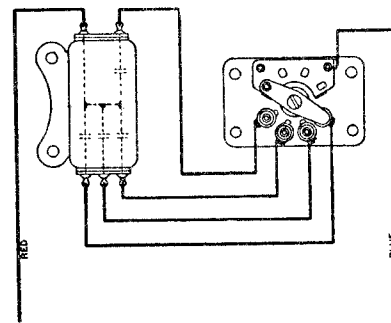
LOCAL-DISTANCE SWITCH



ON-OFF SWITCH



DIAL LIGHT



STONE CONTROL CONDENSER

STONE CONTROL SWITCH

Condensers in R.F. By-Pass No. 1

- L—Line by-pass.
- L—Line by-pass.
- C—2nd-A.F. bias by-pass.
- E—1st-R.F. screen by-pass.

Condensers in Detector By-Pass

- F—2nd-3rd R.F. screen by-pass.
- M—Detector-1st A.F. coupling condenser.
- P—Phone condenser.
- P—Phone condenser.

Condensers in R.F. By-Pass No. 2

- A—1st-R.F. bias by-pass.
- B—R.F. bias by-pass.
- U—1st-A.F. filter condenser.

Condensers in R.F. By-Pass No. 3

- D—Detector bias by-pass.
- H—R.F. plate-circuit by-pass.
- T—Detector grid-circuit by-pass.

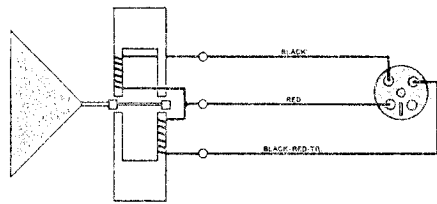
CONNECTION OF UNITS IN TYPE L-2 CHASSIS, AND, AT RIGHT, CONNECTIONS TO TERMINAL PANEL OF TYPE N SPEAKER.

ATWATER KENT MFG. CO.

MODEL 70,76
Chassis "Q"
Voltage

Type Q Chassis (battery operated) has three stages of screen-grid R. F. amplification, grid detection, one stage of transformer-coupled audio, and a double-audio output stage.

An output filter choke and condenser are used in the Q₂ (above Serial No. 5704025), as shown in the diagram below. The Q₁ Chassis does not have these two parts.



CONNECTIONS OF INDUCTOR
TYPE J SPEAKER.

VOLTAGE TABLE FOR TYPE Q CHASSIS

Set in operation. Volume control at maximum.
L-D switch at distance.

Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

180 VOLTS "B" BATTERY

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3.3	135	1.5	45
2nd-R.F.	3.3	135	1.5	45
3rd-R.F.	3.3	135	2.5	45
Detector	5.0	70	—	—
1st-A.F.	5.0	67	45	—
2A	5.0	180	45	—
2Aa	5.0	180	45	—

R.F. By-Pass No. 1

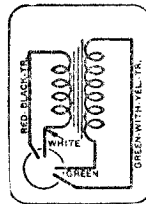
- G—R.F. screen by-pass.
- V—1st-R.F. grid-circuit by-pass.
- Y—Output filter condenser.
- N—1st-R.F. filament by-pass.

R.F. By-Pass No. 2*

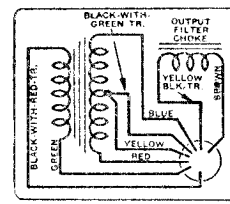
- H—R.F. plate-circuit by-pass.
- T—Detector filter condenser.
- P—"Phone" condenser.
- P—"Phone" condenser.

R.F. By-Pass No. 3

- S—Detector filament by-pass.
- R—3rd-R.F. filament by-pass.
- R—3rd-R.F. filament by-pass.
- O—2nd-R.F. filament by-pass.

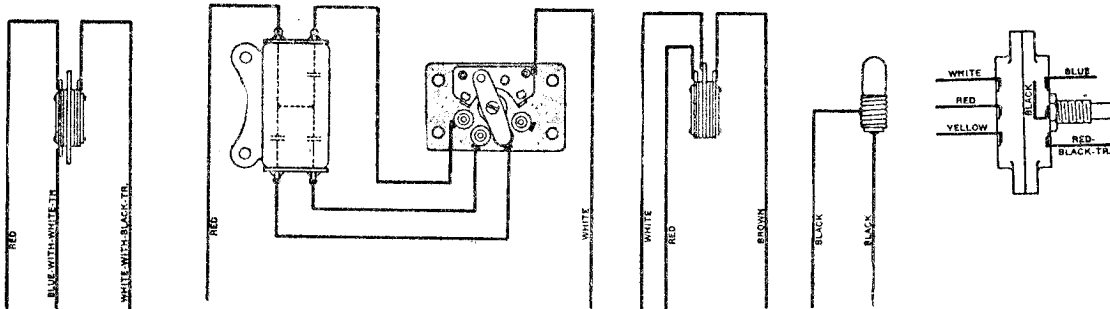


No. 1 A. F. T.



No. 2 A. F. INPUT TRANSFORMER

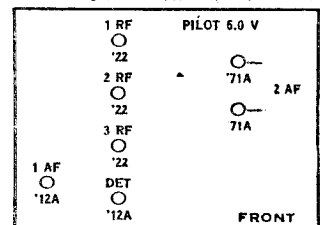
- LOCAL-DISTANCE SWITCH
- ONE CONTROL CONDENSER
- ONE CONTROL SWITCH
- ON-OFF TOGGLE SWITCH
- DIAL LIGHT
- DUAL VOLUME CONTROL



The output filter choke is not used in the Q-1 chassis.

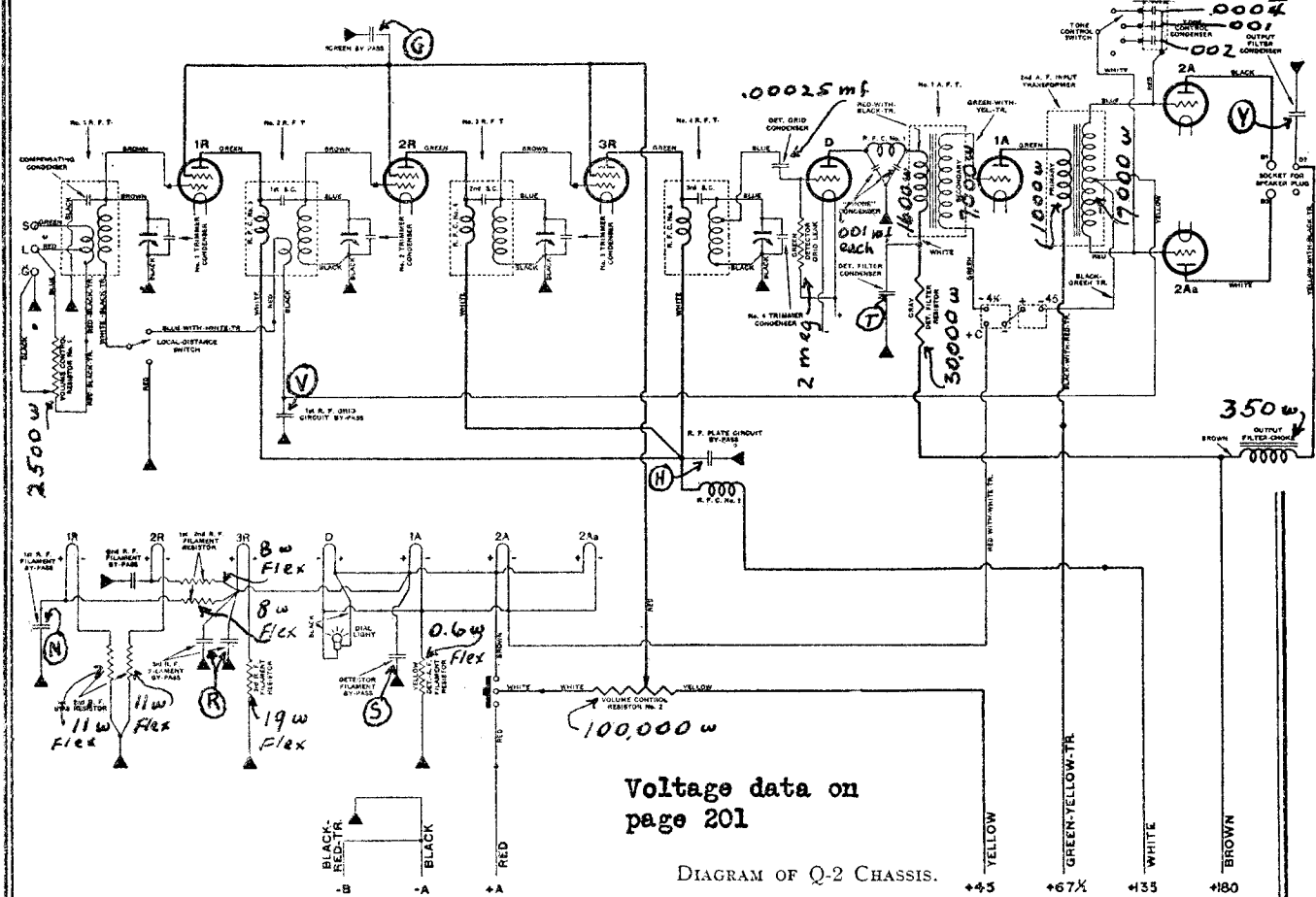
*The connections shown for R. F. by-pass No. 2 are correct when this part is No. 16000. However, if a No. 18350 (H-28) is used. "P" and "P" are at top and "H" and "T" are at bottom; therefore, the connections to this condenser are correspondingly changed

Models Q (Battery), D (DC) (1930)

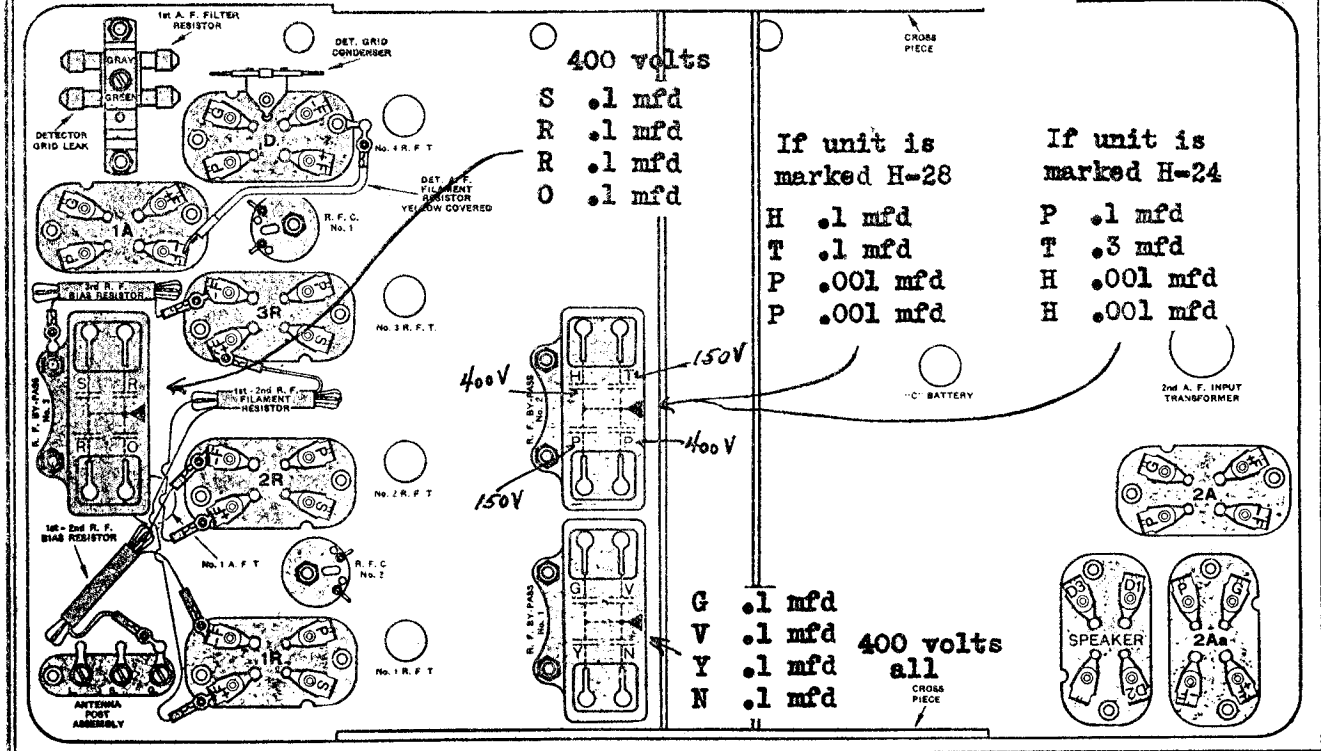


MODEL 70,76
Chassis Q

ATWATER KENT MFG. CO.

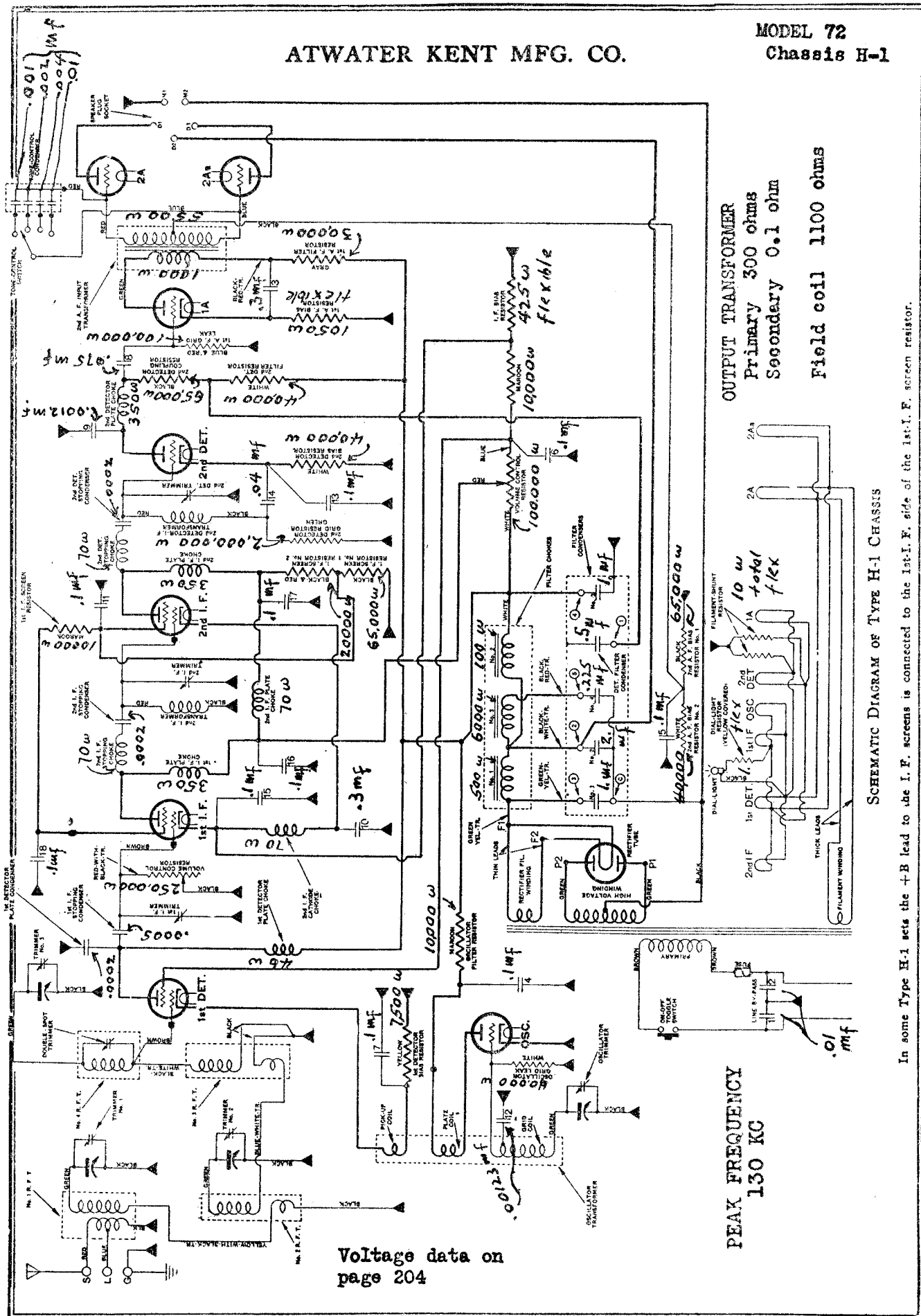


The output filter choke and filter condenser are used only in Type Q-2 Chassis. The choke is mounted in the 2nd-A. F. input transformer container. Type Q-1 Chassis may be converted to Q-2 by installing this unit (No. 18020) and connecting it as shown above



ATWATER KENT MFG. CO.

MODEL 72 Chassis H-1

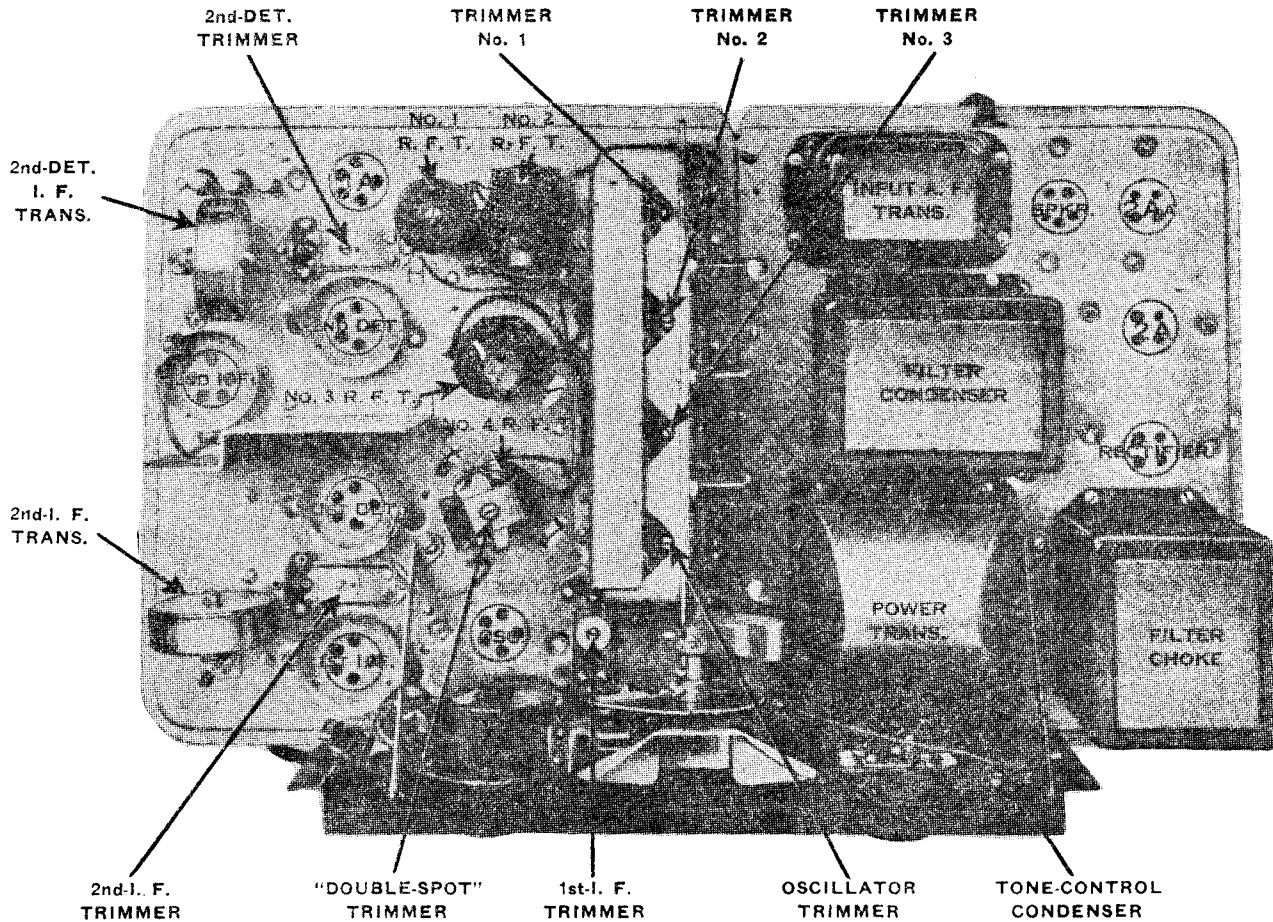


MODEL 72
Chassis "H-1"
Voltage

ATWATER KENT MFG. CO.

TYPE H-1, No. 16500, SUPER-HETERODYNE CHASSIS

(Below Serial No. 5,855,201)



TOP VIEW OF ATWATER KENT TYPE H-1 SUPER-HETERODYNE CHASSIS

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.4	150	3.	12.
Osc.	2.3	100	10.*	
1st IF	2.3	150	3.	75.
2nd IF	2.3	145	3.	85.
2nd Det	2.3	100	13.**	
1st AF	2.3	65	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With volume control at minimum, the IF plate voltage is reduced to about 150 volts and screen voltage is reduced to about 10 volts. * Use 250 volts scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor.

ATWATER KENT MFG. CO.

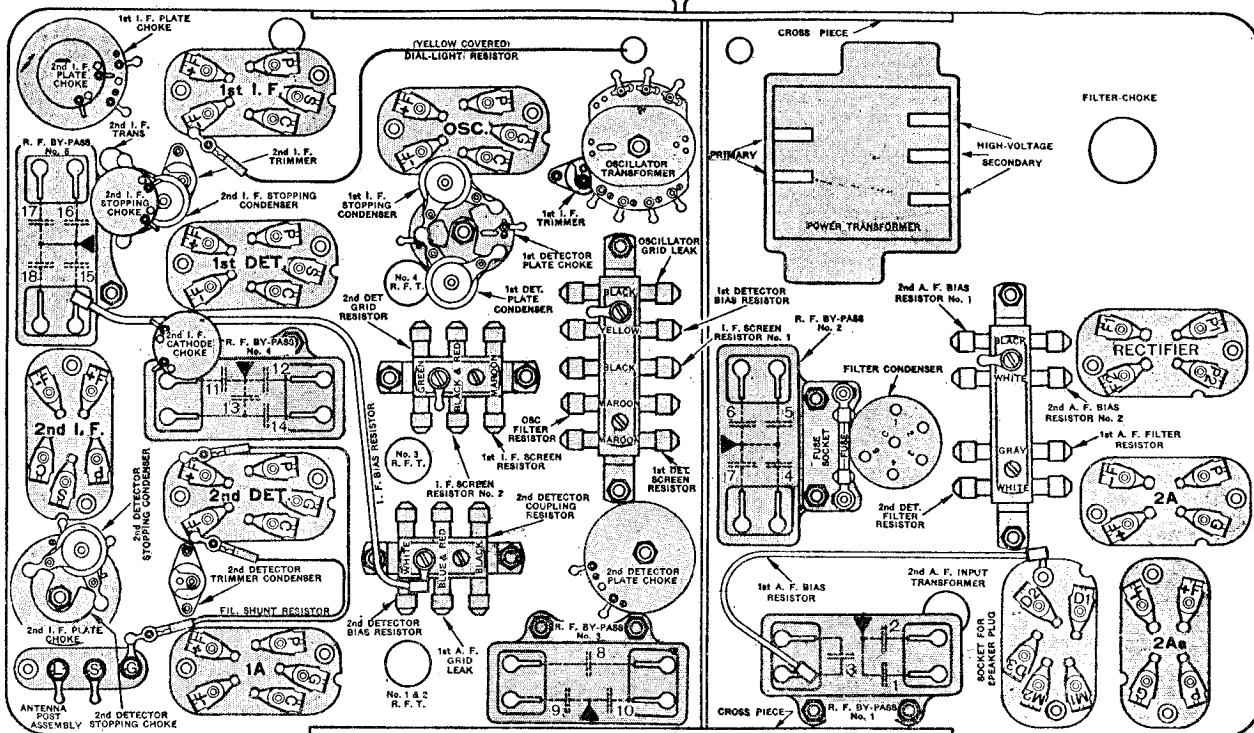
MODEL 72
 Chassis H-1
 Below serial
 5,855,201

FILTER CONDENSERS. Numerals in circles indicate connections upon filter condenser terminal block. These numbers are shown upon the parts layout below and also upon the chassis layout

Detector filter	.1 mfd	connected between terminal (1) and can
Filter #1	2.0 mfd	connected between terminal (2) and center stud
Filter #2	1.0 mfd	connected between terminal (3) and center stud
Filter #3	1.0 mfd	connected between terminal (4) and can
Resonant condenser	.225 mfd	connected between terminal (5) and center stud

BYPASS CONDENSERS. The small numerals adjacent to the bypass condensers corresponds with the designating numerals upon the chassis layout

RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360
	3	.3 mfd	400 volts				
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262
	6	.1 mfd	400 volts	7	.1 mfd	400 volts	
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745
	10	.3 mfd	150 volts				
RF Bypass #4	11	.1 mfd	400 volts	12	.00123mfd	400 volts	# 17370
	13	.1 mfd	400 volts	14	.04 mfd	400 volts	
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262
	17	.1 mfd	400 volts	18	.1 mfd	400 volts	



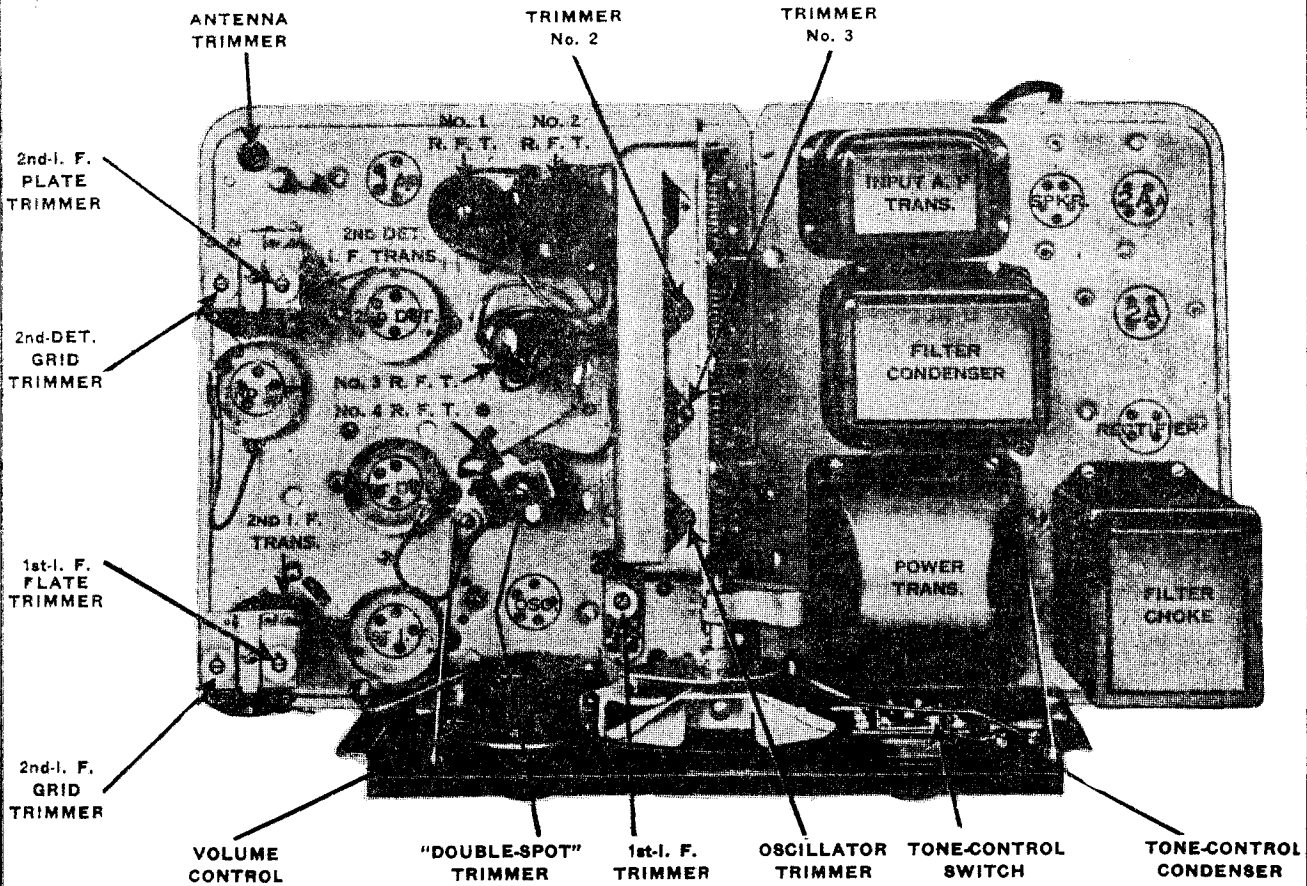
BOTTOM CHART OF TYPE H-1 CHASSIS

MODEL 72
 Chassis "H-2"
 Voltage

ATWATER KENT MFG. CO.

TYPE H-2, No. 16500, SUPER-HETERODYNE CHASSIS

(Above Serial No. 5,855,201)



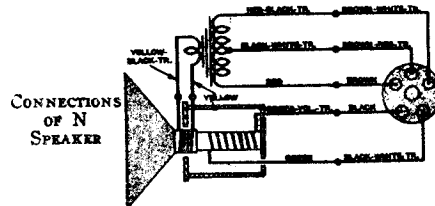
TOP VIEW OF ATWATER KENT TYPE H-2 SUPER-HETERODYNE CHASSIS
 Note that trimmer No. 1 is omitted. The antenna trimmer serves the same purpose

VOLTAGE TABLE FOR TYPE H-2 CHASSIS

Set in operation. Volume control at maximum

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.3	150	4.	15.
Ose	2.5	130	10.*	
1st IF	2.3	150	3.5	100.
2nd IF	2.3	150	3.5	85.
2nd Det	2.3	100	14.**	
1st AF	2.3	70	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With the volume control at minimum, the IF voltage is reduced to 15 volts. * Use 250 volt scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2. All readings made from cathode in heater type tubes and -F in filament type tubes.



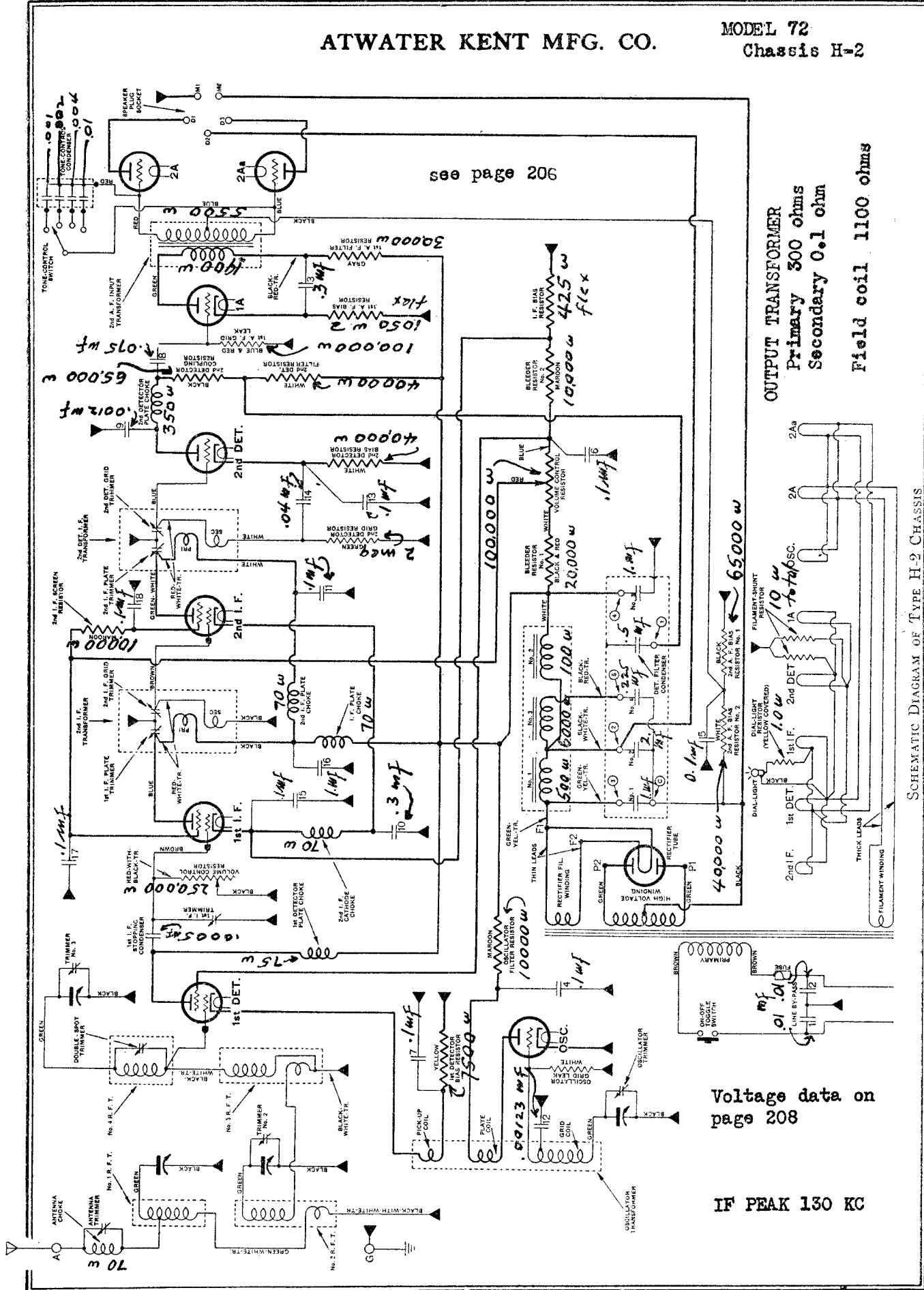
THE DOUBLE SPOT CIRCUIT

The double spot circuit is simultaneously tuned to two different frequencies. The complete circuit consists of #3 and #4 RF transformers and #3 variable condenser. A part of this circuit, #4 RFT, the double spot trimmer and #3 variable condenser is automatically tuned to 260 KC more than the desired frequency.

ATWATER KENT MFG. CO.

MODEL 72
Chassis H-2

see page 206



OUTPUT TRANSFORMER
 Primary 300 ohms
 Secondary 0.1 ohm
 Field coil 1100 ohms

SCHEMATIC DIAGRAM OF TYPE H-2 CHASSIS

Voltage data on page 208

IF PEAK 130 KC

Voltage reference on page 1-50.

MODEL 72

ATWATER KENT MFG. CO.

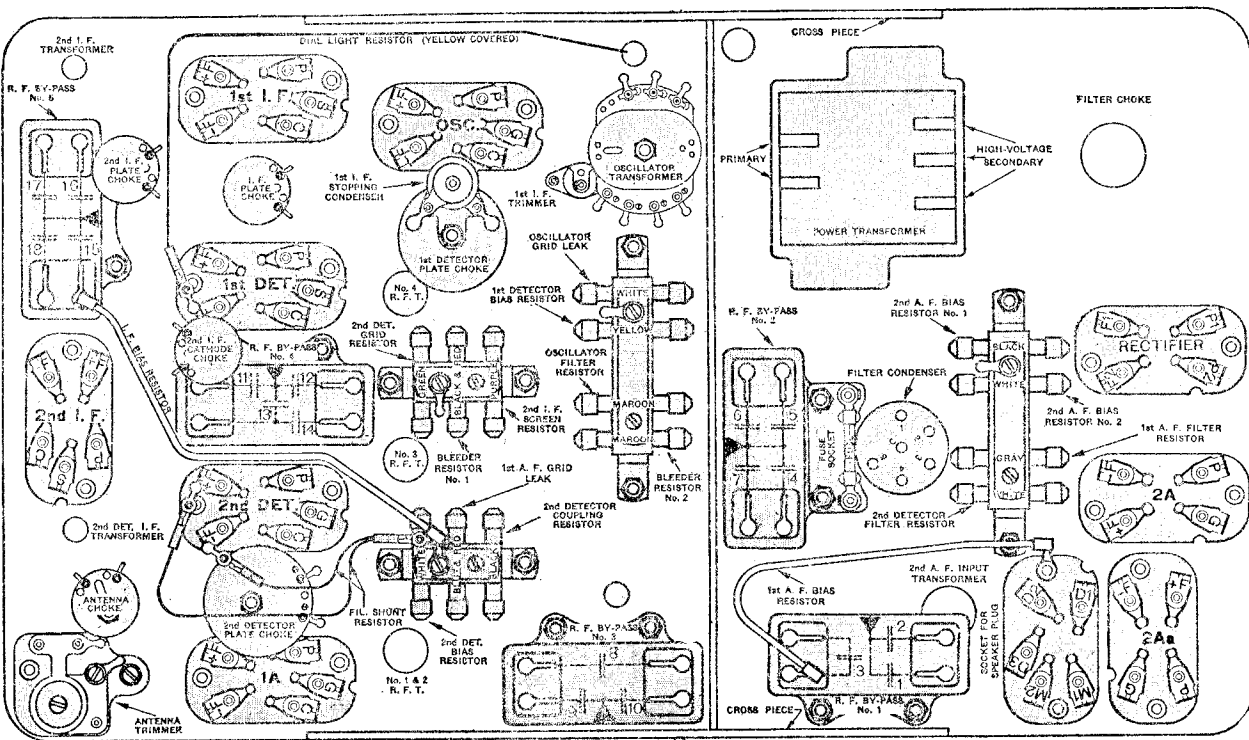
Chassis H-2
 Above serial
 5,855,201

FILTER CONDENSERS. Numerals in circles shown on wiring diagram indicate connections upon filter condenser terminal block. These numbers are also shown upon the parts layout below. Also upon the chassis wiring diagram

Detector filter	.1 mfd	connected between terminal (1) and can
Filter #1	2.0 mfd	connected between terminal (2) and center stud
Filter #2	1.0 mfd	connected between terminal (3) and center stud
Filter #3	1.0 mfd	connected between terminal (4) and can
Resonant condenser	.225 mfd	connected between terminal (5) and center stud

BYPASS CONDENSERS. The small numerals adjacent to the various bypass condensers shown on the wiring diagram correspond with the designating numerals upon the parts layout below and the chassis

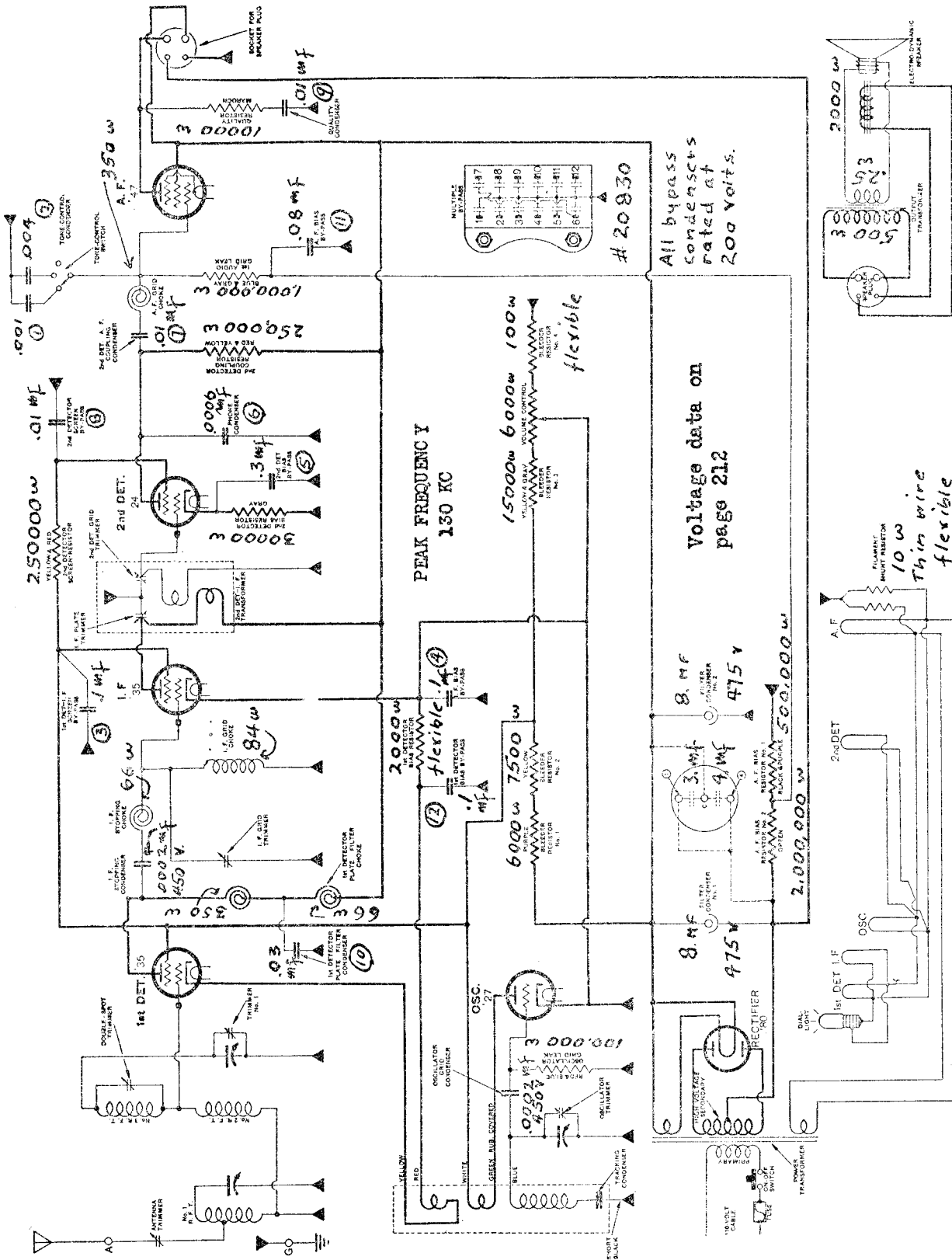
RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360
	3	.3 mfd	400 volts				
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262
	6	.1 mfd	400 volts	7	.1 mfd	400 volts	
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745
	10	.3 mfd	150 volts				
RF Bypass #4	11	.1 mfd	400 volts	12	.00123 mfd	400 volts	# 17370
	13	.1 mfd	400 volts	14	.04 mfd	400 volts	
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262
	17	.1 mfd	400 volts	18	.1 mfd	400 volts	



BOTTOM VIEW OF TYPE H-2 CHASSIS
 In this chart, the 2nd-I. F. screen resistor should be maroon instead of purple.

ATWATER KENT MFG. CO.

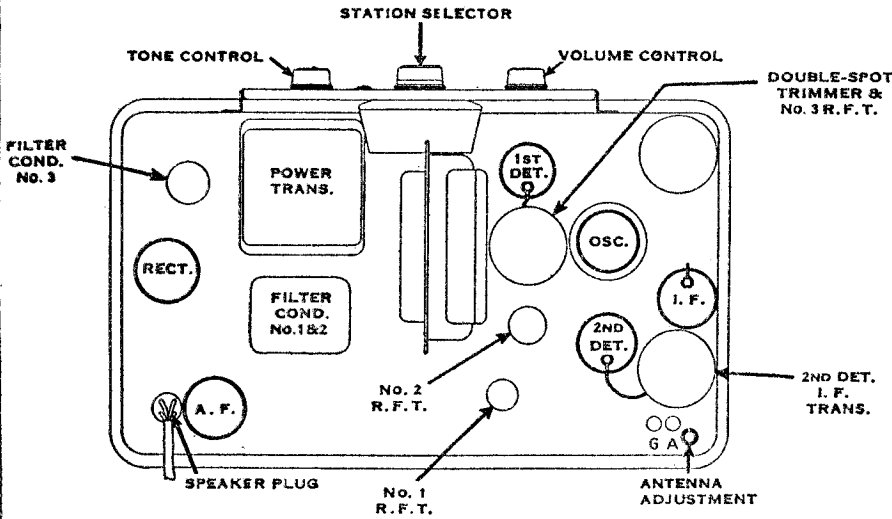
MODEL 80, 80-F
83, 83-F



In Model 83 and 83-F, a filter-condenser unit is used and it is connected as shown in dotted lines. This unit is NOT used in Model 80 and 80-F. In Model 83, 83-F, the electrolytic filter condenser No. 1 is not used, and the filament circuit is slightly different.

MODEL 80, 80-F
83, 83-F

ATWATER KENT MFG. CO.



Condensers in Multiple By-pass Model 80, 80-F, 83, 83-F

- 1—Tone-control condenser.
- 2—Tone-control condenser.
- 3—1st-detector—I. F. screen by-pass.
- 4—I. F. bias by-pass.
- 5—2nd-detector bias by-pass.
- 6—Phone condenser.
- 7—2nd-detector—A. F. coupling condenser.
- 8—2nd-detector screen by-pass.
- 9—Quality condenser.
- 10—1st-detector plate filter condenser.
- 11—A. F. bias by-pass.
- 12—1st-detector bias by-pass.

TOP VIEW OF MODEL 83, 83-F.

The circle in the upper right-hand corner is the shield that covers the coupling unit between the 1st-detector and the I. F. tubes.

The numbers given above correspond with the numbers marked upon the multiple condenser unit.

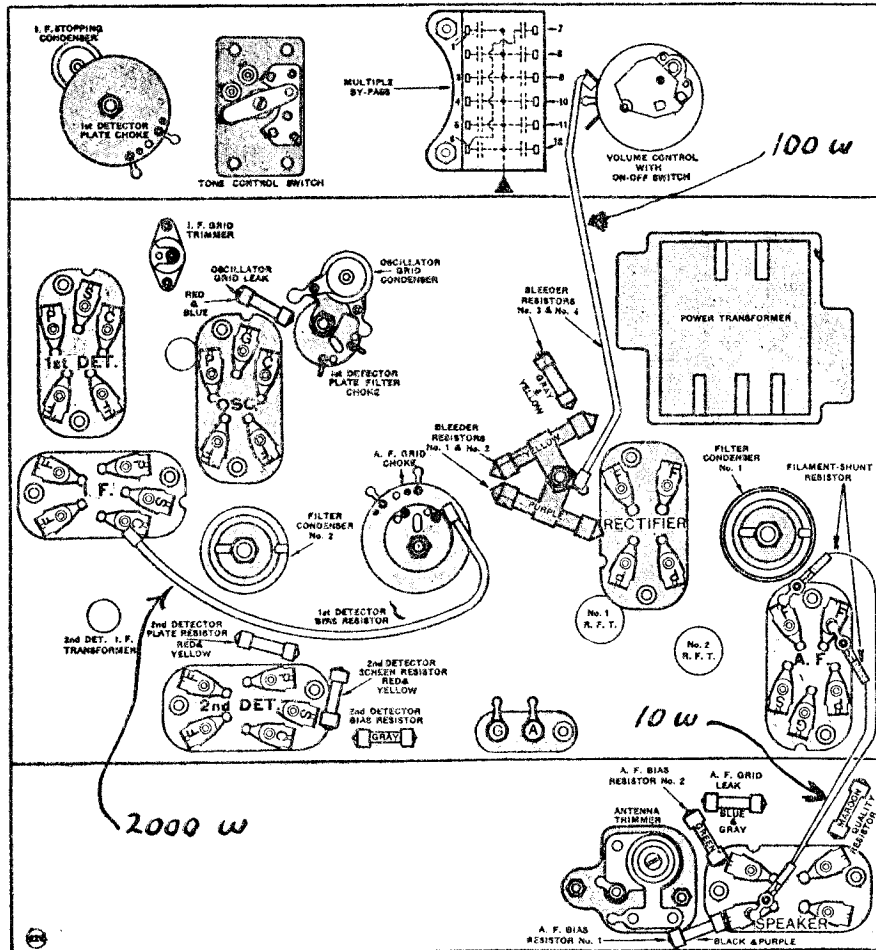


	Plate	Screen	Control
1st Det.	225	90	5*
I=F	230	95	2*
2nd Det	110	45	5*
1st A=F	230	240	4*
2nd A=F	100		
Osc			

* A variable depending upon several factors. Capacity of voltmeter leads may cause oscillator tube to cease functioning.

CHART OF MODEL 80, 80-F.

The parts on Model 83, 83-F are similar except that Model 83, 83-F has a filter condenser unit and only one electrolytic condenser.

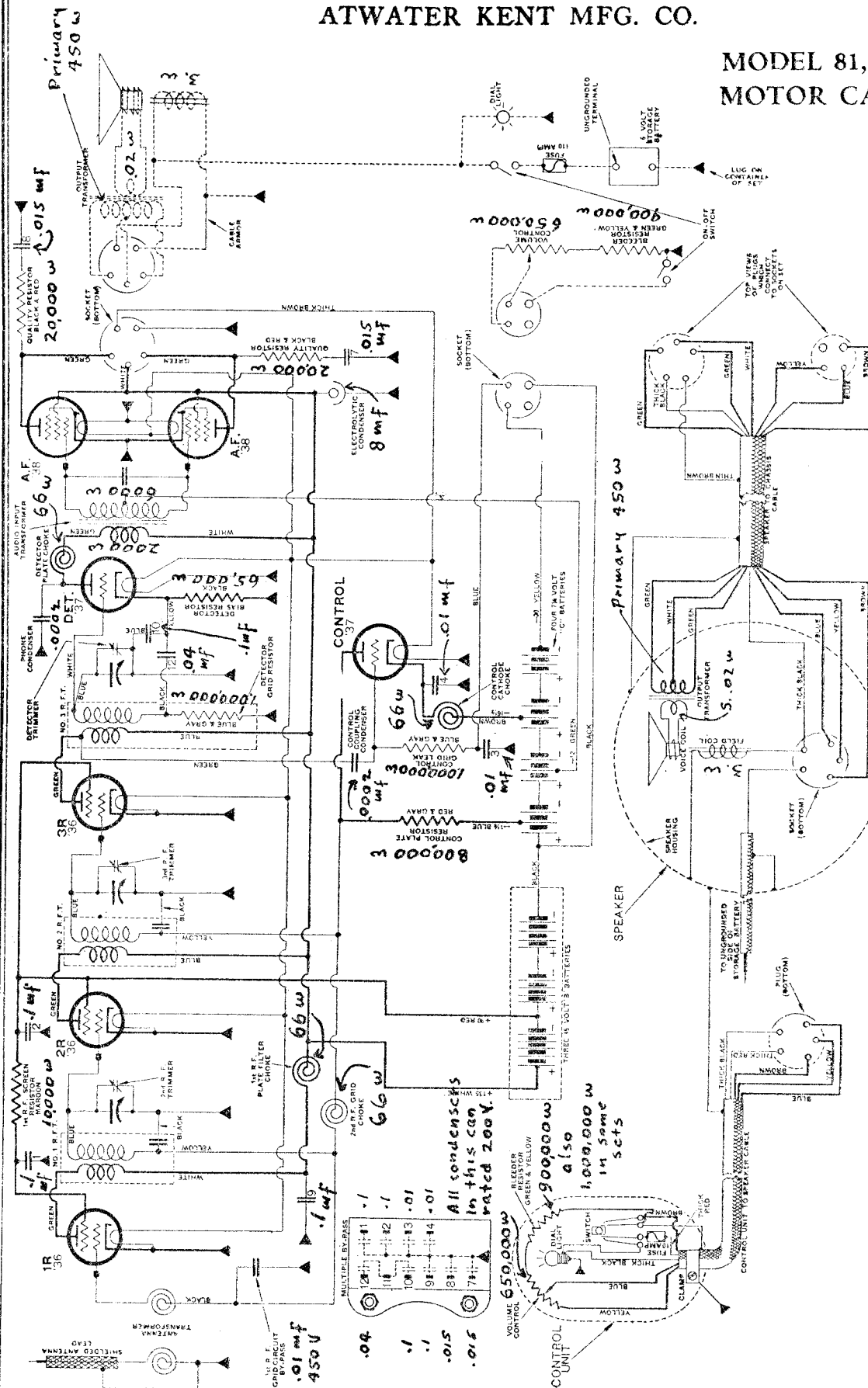
ATWATER KENT MFG. CO.

MODEL 81

81-B

81-C

MODEL 81, 81-B, 81-C MOTOR CAR RADIO



Voltage data on page 212

The small numerals adjacent to the bypass condensers correspond with the numerals marked upon the multiple bypass condenser unit.

ATWATER KENT MFG. CO.

VOLTAGE TABLE

FOR MODEL 80, 81, 82, 82-D, 82-Q, 83, 84, 84-D, 84-Q, 85, 85-Q, 86, 87 and 89

The voltages listed in this table are only approximate, and are measured values, not actual operating values. Turn volume control to maximum.

Use 250-volt scale of a 1000-ohm-per-volt D. C. voltmeter.

All plate, screen and grid measurements are made from cathode in heater-type tube, and from —F in plain-filament-type tube.

When replacing a tubular resistor, use a resistor of the same color as the defective unit. However, if a resistor has been removed, or its identification destroyed, replace it with a resistor having the color that is specified in the diagram for that set.

When replacing a tubular resistor, use a resistor of the same color as the defective unit. However, if a resistor has been removed, or its identification destroyed, replace it with a resistor having the color that is specified in the diagram for that set.

	MODEL 80	MODEL 81	MODEL 82	MODEL 82-D	MODEL 82-Q	MODEL 83	MODEL 84	MODEL 84-D	MODEL 84-Q	MODEL 85	MODEL 85-Q	MODEL 86	MODEL 87	MODEL 89
LINE VOLTAGE	110	110	110	112	110	110	110	120	110	110	110	115	110	110
TOTAL "B" VOLTAGE	125	125	125	125	125	125	125	125	125	125	125	125	125	125
FILAMENT	5.5	5.5	5.5	5.5	2	2.4	2.4	5.7	2	2.4	2	2.4	2.4	2.4
PLATE	125	125	135	70	125	225	205	80	125	135	135	125	170	135
SCREEN	75	75	50	50	40	90	65	50	65	50	40	40	80	50
GRID	SMALL	SMALL	SMALL	SMALL	3	5	6	5	3	3	3	2	2	2
FILAMENT	2.4	2.4	2.4	6	2	2.4	2.4	6.5	2	2.4	2	2.4	2.4	2.4
PLATE	230	140	95	50	125	230	215	105	125	135	135	125	170	135
SCREEN	95	50	50	SMALL	60	95	65	55	65	50	65	40	80	50
GRID	2	SMALL	SMALL	SMALL	3	2	3	SMALL	SMALL	2	3	2	2	2
FILAMENT	2.4	2.4	2.4	5.5	2	2.4	2.4	5	2	2.4	2	2.4	2.4	2.4
PLATE	110	105	55	45	110	110	90	55	60	100	40	95	90	120
SCREEN	45	65	10	25	45	45	45	10	25	65	25	60	SMALL	15
GRID	5	8	2	3	3	5	6	1	3	7	3	8	SMALL	15
FILAMENT	2.4	5.5	2.4	5.5	2	2.4	2.4	6	2	2.4	2	2.4	2.4	2.4
PLATE	230	120	230	75	55	230	205	80	55	215	55	210	90	120
SCREEN	240	123	240	---	---	240	215	---	---	225	---	220	---	---
GRID	4	11	5	3	3	4	5	2.5	3	5	3	5	3	4
FILAMENT	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PLATE	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SCREEN	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GRID	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FILAMENT	2.4	---	2.4	5	2	2.4	2.4	6	2	2.4	2	2.4	2.4	2.4
PLATE	95	---	95	100	60	100	70	110	60	100	40	95	85	100
SCREEN	*	---	*	*	*	*	*	*	*	*	*	*	*	*
GRID	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FILAMENT	---	5.5	2.4	---	---	---	---	---	---	---	---	---	---	---
PLATE	---	3	15	---	---	---	---	---	---	---	---	---	---	---
SCREEN	---	2	8	---	---	---	---	---	---	---	---	---	---	---
GRID	---	---	4	---	---	---	---	---	---	---	---	---	---	---

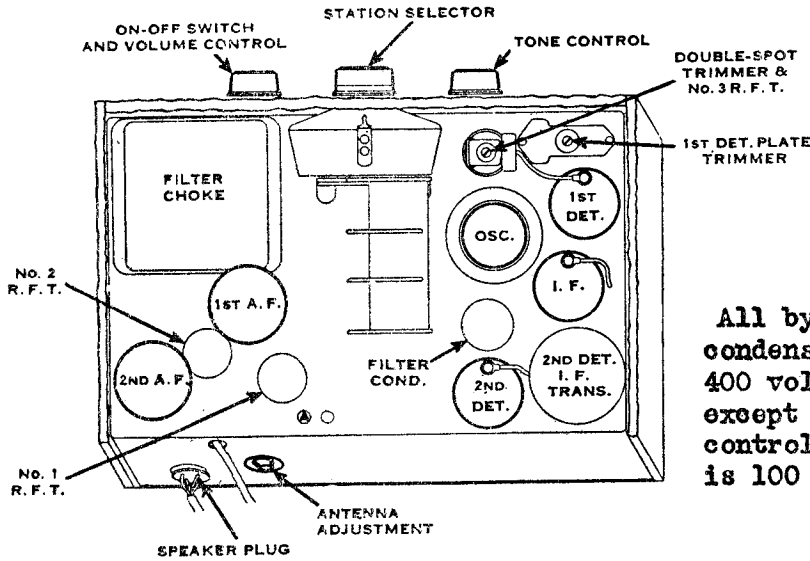
* The measured oscillator grid voltage will vary dependent on the capacity of the voltmeter leads. In some cases, the presence of the leads will stop oscillation and no reading will be secured for grid bias. In other cases, the reading will be only slight, or it may be as high as 10 volts.

**This includes the 1st, 2nd and 3rd R. F. tubes in Model 81. †This is the detector tube in Model 81.

MODEL 82-D

ATWATER KENT MFG. CO.

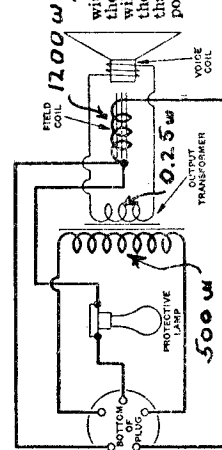
MODEL 82-D TOP VIEW AND CHART



All bypass condensers 400 volts except tone control which is 100 volts

TOP VIEW OF MODEL 82-D.

The protective lamp (75 watts) is connected in series with the electrolytic filter condenser in the chassis. If the 110-volt D. C. supply plug is reversed, the lamp will light. When the 110-volt plug is properly inserted, the lamp does not light. This action is due to the fact that the electrolytic condenser passes current if the polarity of the applied D. C. voltage is not correct.



CIRCUIT OF SPEAKER USED IN MODEL 82-D, 84-D.

By-pass Condensers in Model 82-D

R. F. By-pass No. 1

- 1—Ground coupling condenser.
- 2—1st-detector screen by-pass.
- 3—110-volt line condenser.
- 4—1st-detector grid by-pass.

R. F. By-pass No. 2

- 5—2nd-detector—1st-A.F. coupling condenser
- 6—Filter condenser No. 2.
- 7—Not used.

R. F. By-pass No. 3

- 8—Quality condenser.
- 9—2nd-detector filter condenser.
- 10—110-volt line by-pass.

Tone-control Condenser

- 11—Not used.
- 12—Tone condenser.
- 13—Tone condenser.
- 14—Tone condenser.

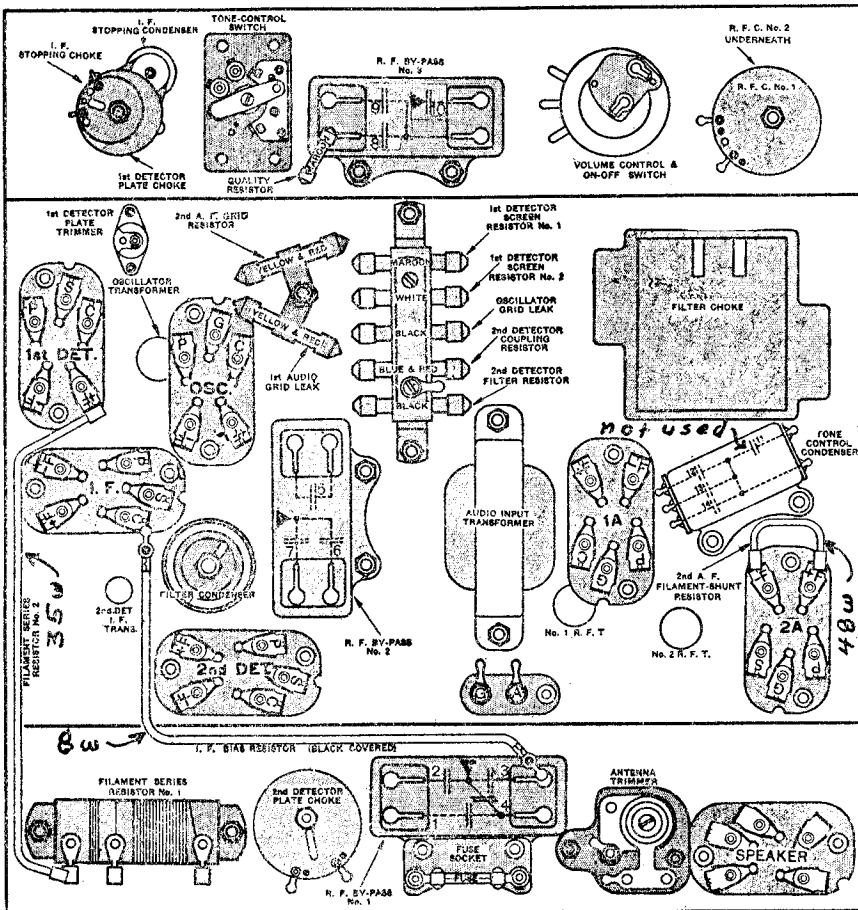
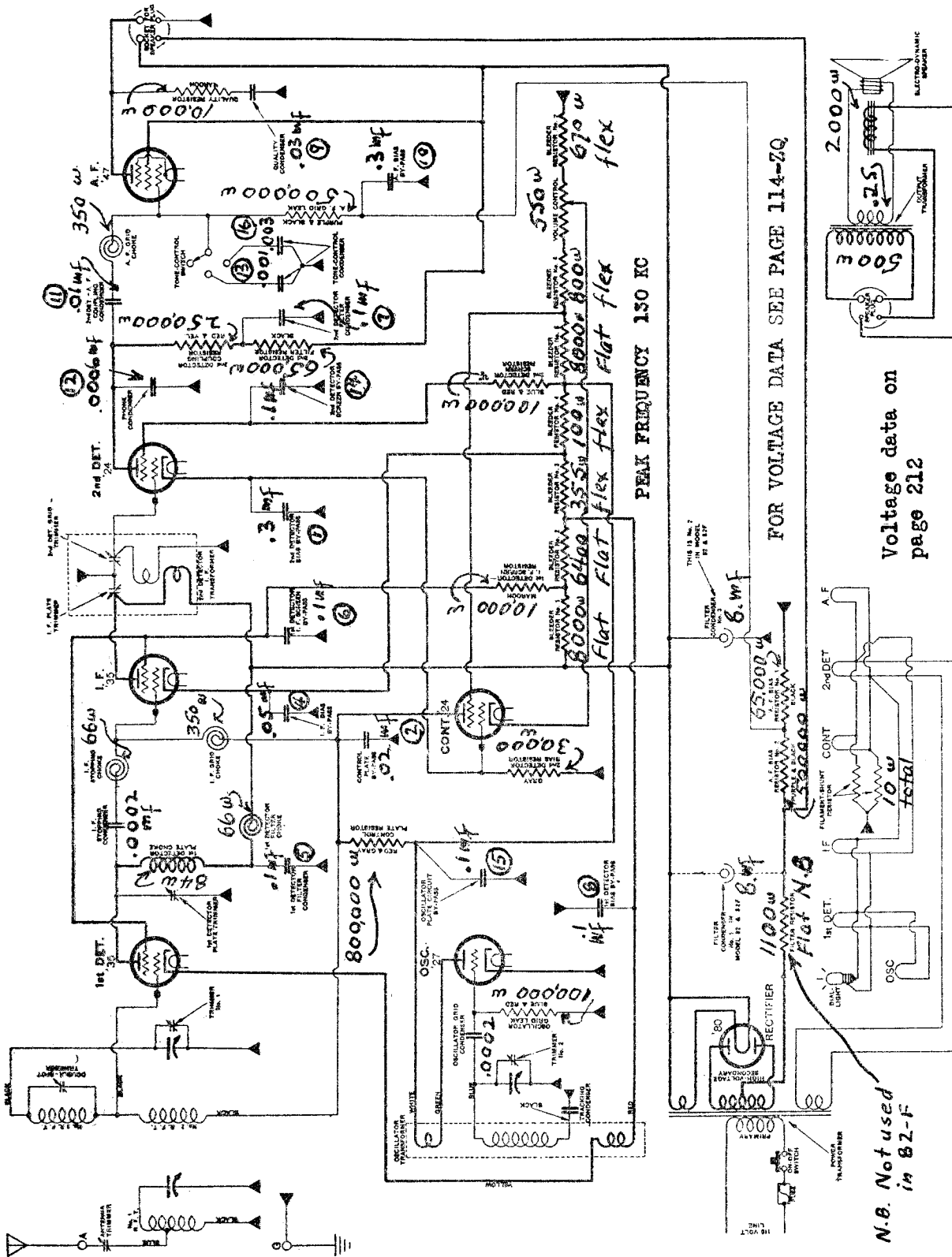


CHART OF MODEL 82-D.

ATWATER KENT MFG. CO.

MODEL 82, 82-F



FOR VOLTAGE DATA SEE PAGE 114-ZQ

PEAK FREQUENCY 150 KC

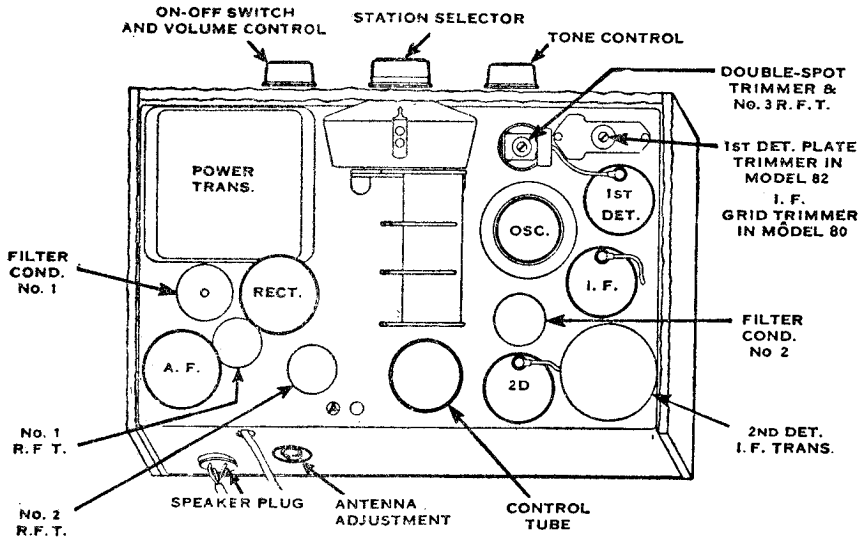
Voltage data on page 212

N.B. Not used in 82-F

Numerals adjacent to bypass condensers designate units shown upon parts layout on next page within multiple condensers. Condenser voltage ratings are shown upon next page.

MODEL 82, 82-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 82, 82-F.

The top view of Model 80, 80-F is similar except that it has no control tube and the position of No. 1 and No. 2 R. F. T. is interchanged.

CONDENSERS

RF Bypass # 1
21180
All 400 Volts

RF Bypass # 2
15262
5-6 150 volts
7-8 400 volts

RF Bypass # 3
21170
All 400 volts

Tone Control
20010
All 100 volts

By-pass Condensers in Model 82, 82-F

R. F. By-pass No. 1

- 1—2nd-detector bias by-pass.
- 2—Control plate by-pass.
- 3—Not used.
- 4—I. F. bias by-pass.

R. F. By-pass No. 2

- 5—1st-detector filter condenser.
- 6—1st-detector—I. F. screen by-pass.
- 7—2nd-detector filter condenser.
- 8—1st-detector bias by-pass.

R. F. By-pass No. 3

- 9—Quality condenser.
- 10—A. F. bias by-pass.
- 11—2nd-detector—A. F. coupling condenser.
- 12—Phone condenser.

Tone-control Condenser

- 13—Tone condenser.
- 14—2nd-detector screen by-pass.
- 15—Oscillator plate-circuit by-pass.
- 16—Tone condenser.

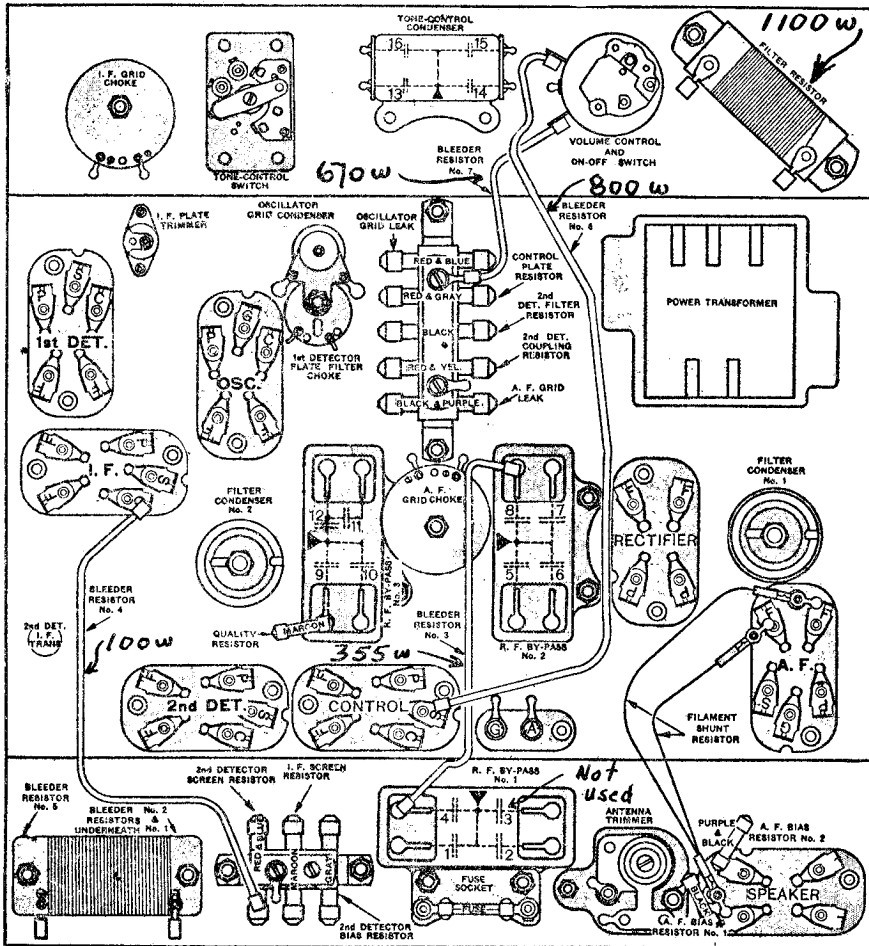
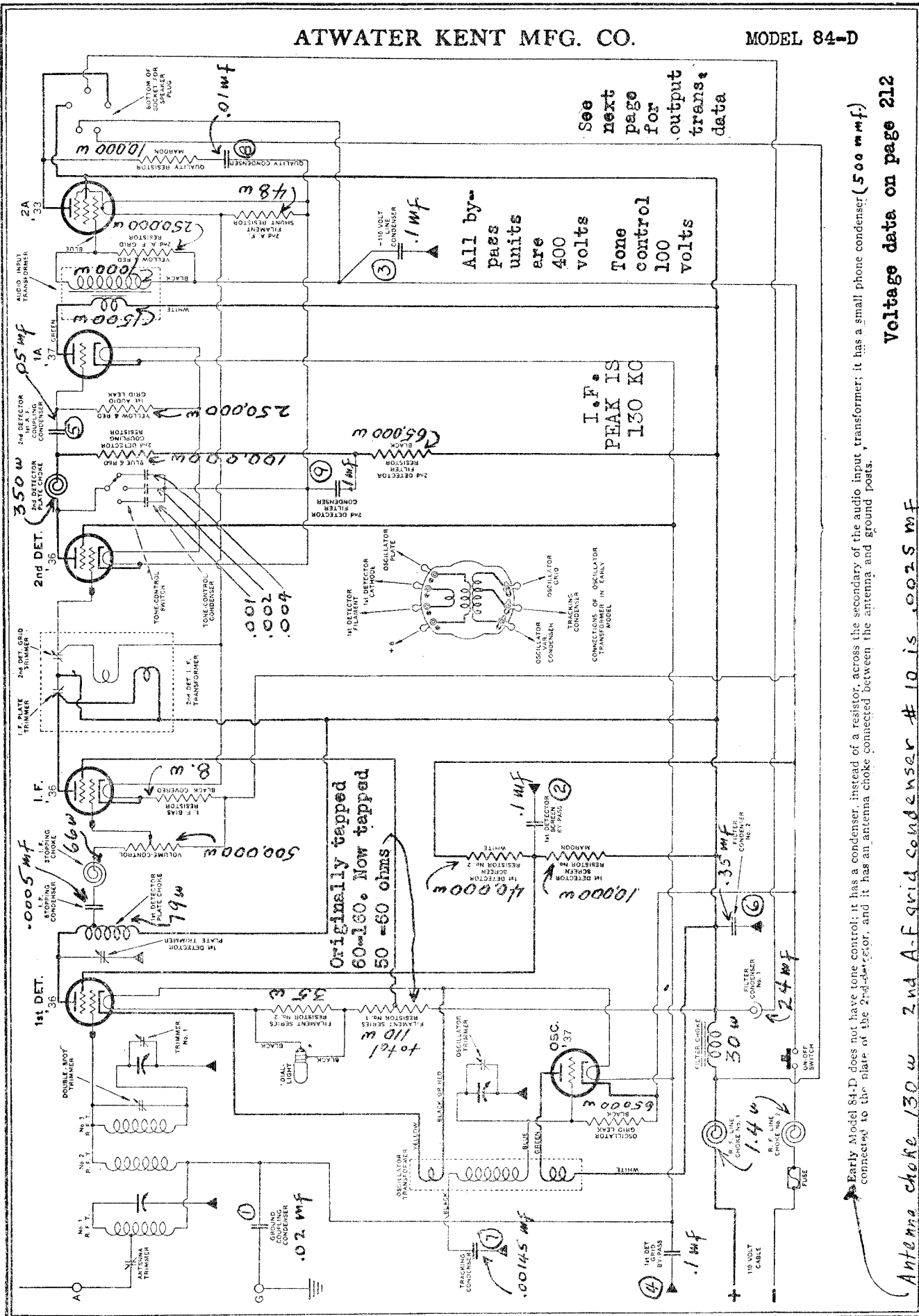


CHART OF MODEL 82, 82-F.

The filter resistor is not used in Model 82-F.

ATWATER KENT MFG. CO.

MODEL 84-D



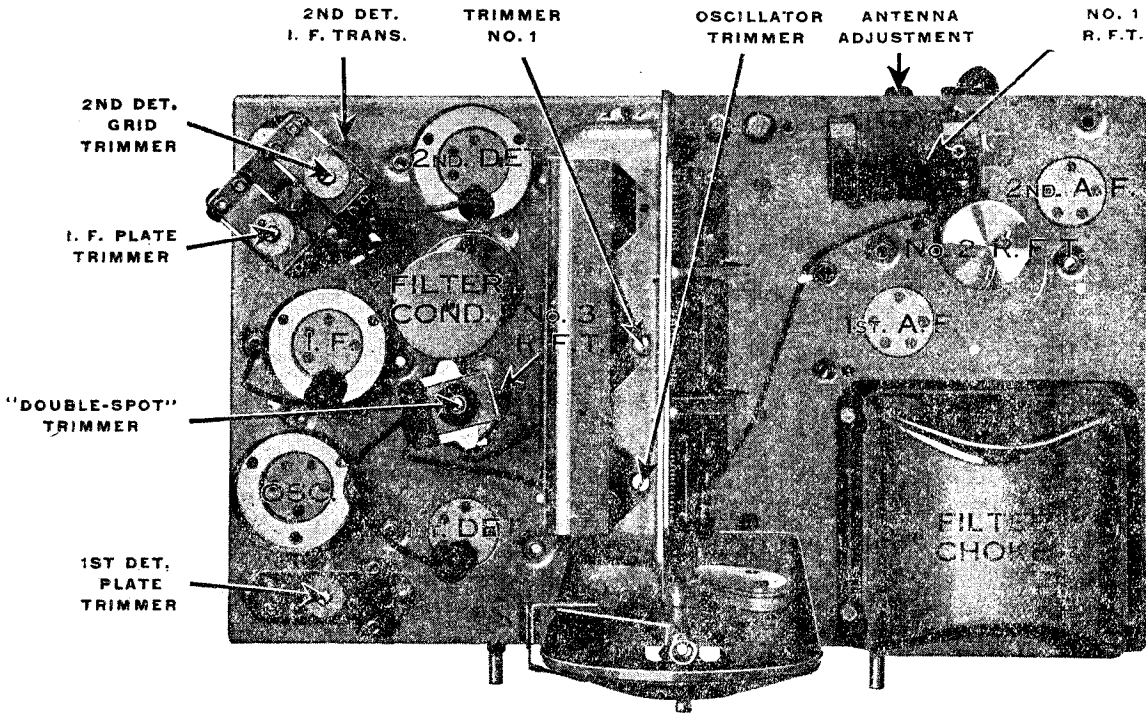
Voltage reference on page 1-56.

Voltage data on page 212

Antenna choke 130 w 2nd A-F grid condenser # 10 is .0015 MF

MODEL 84-D

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 84-D.

OUTPUT TRANSFORMER

Primary 500 ohms
Secondary 0.25 ohm

Field coil 1200 ohms

By-pass Condensers in Model 84-D

Condensers in R. F. By-pass No. 1

- 1—Ground coupling condenser.
- 2—1st-detector screen by-pass.
- 3—110-volt line condenser.
- 4—1st-detector grid by-pass.

R. F. By-pass No. 2

- 5—2nd-detector—1st-A. F. coupling condenser.
- 6—Filter condenser No. 2.
- 7—Tracking condenser.

R. F. By-pass No. 3

- 8—Quality condenser.
- 9—2nd-detector filter condenser.
- 10—2nd-A. F. grid condenser in early-type sets, 2nd-detector phone condenser in later-type sets.

Tone-control Condenser (Late-type sets only)

- 11—Not used.
- 12—Tone condenser.
- 13—Tone condenser.
- 14—Tone condenser.

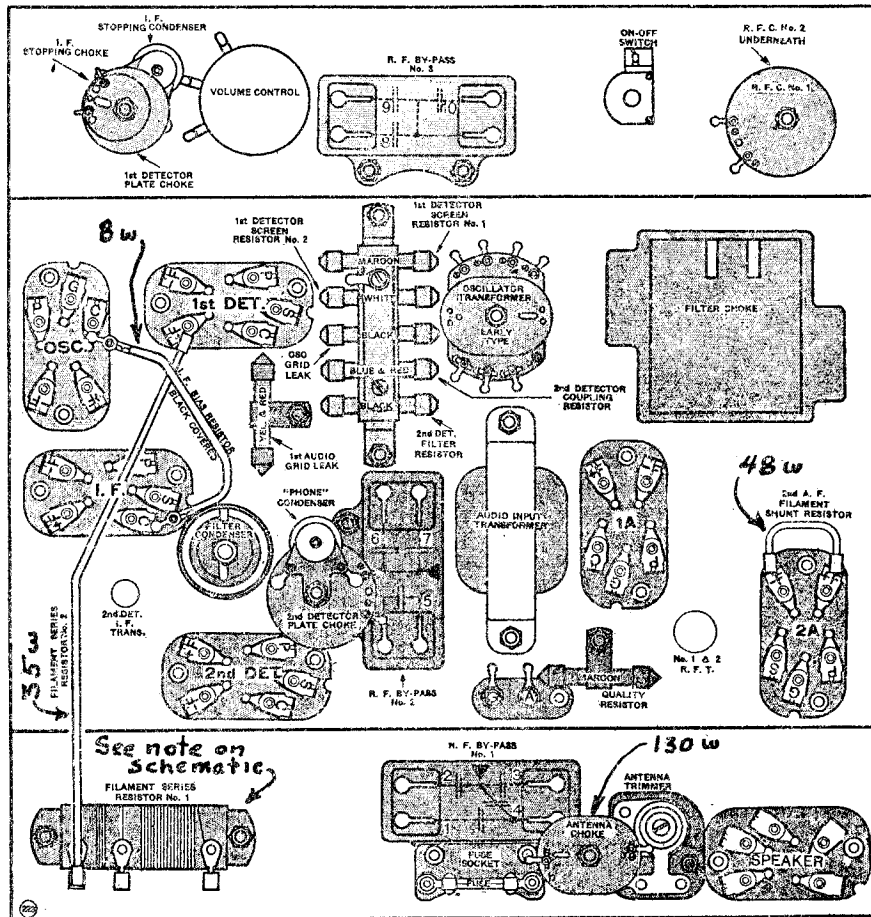
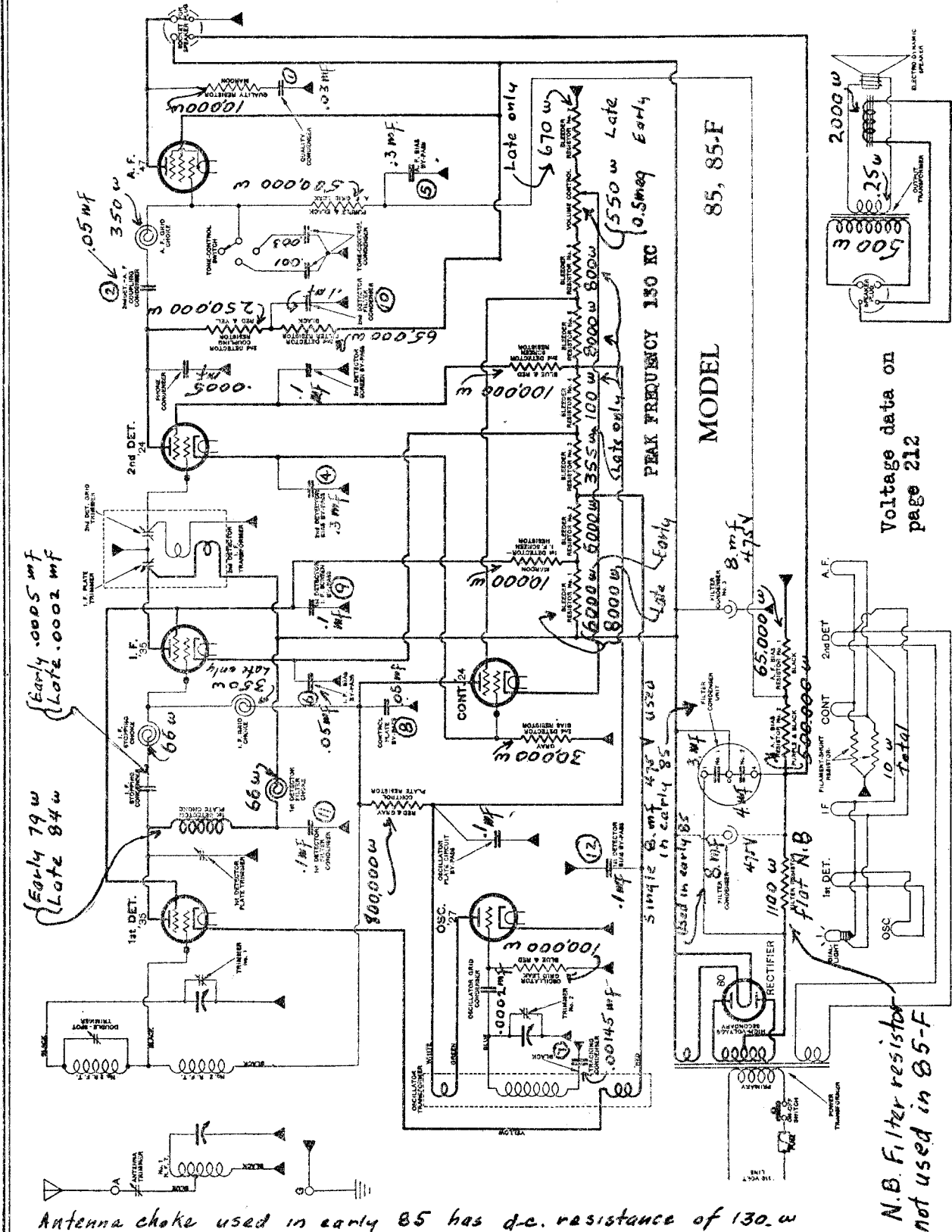


CHART OF MODEL 84-D. (EARLY TYPE WITHOUT TONE CONTROL.)

MODEL 85, 85-F

ATWATER KENT MFG. CO.



Early 79w (Late 84w)
Early .0005 mf (Late .0002 mf)

Antenna choke used in early 85 has d.c. resistance of 130.w

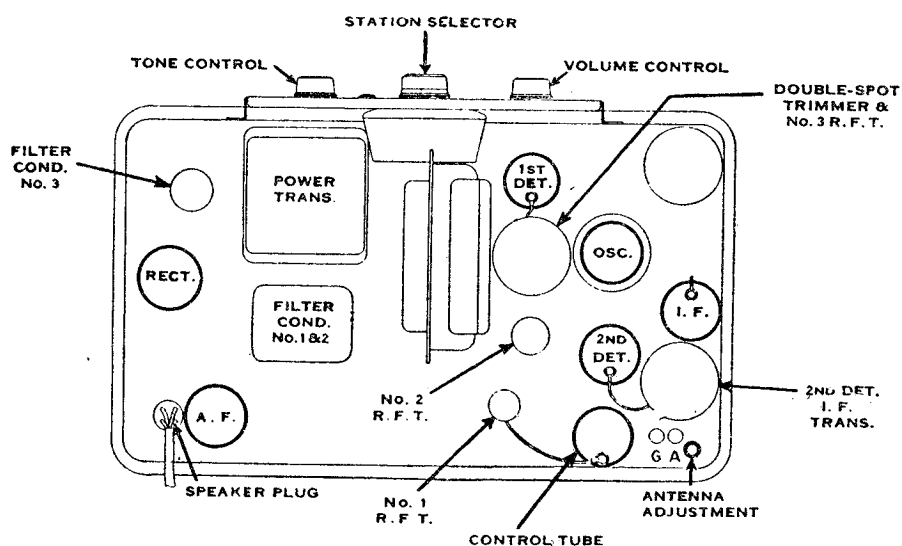
N.B. Filter resistor not used in 85-F

Voltage data on page 212

A few early-type Model 85 do not have automatic volume control; they have three electrolytic filter condensers; the circuit of these early Model 85 sets is similar to Model 80. The tracking condenser is mounted on the oscillator transformer in Model 82 and some 85 sets. The filament circuit of Model 82 is somewhat different from that shown above.

MODEL 85, 85-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 85, 85-F.

The circle in the top right corner represents the shield for the coupling unit between the 1st-detector and I. F. tubes.

See schematic

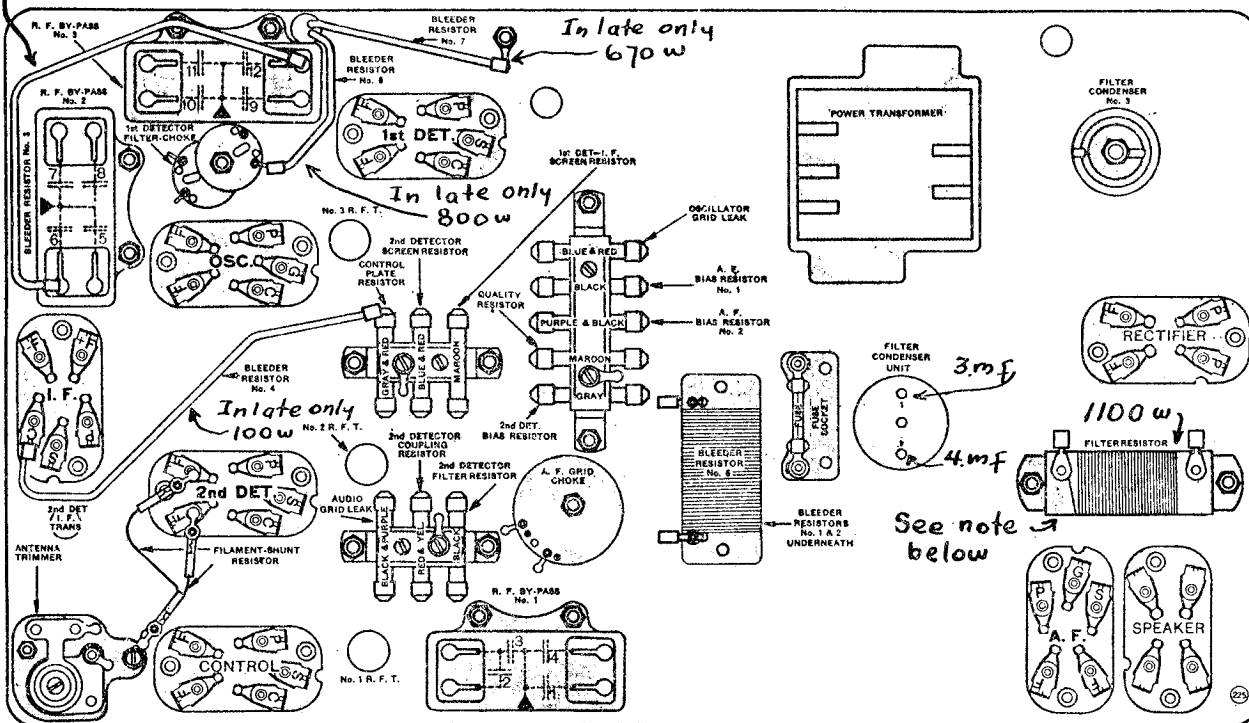


CHART OF MODEL 85, 85-F.

The filter resistor is not used in Model 85-F.

By-pass Condensers in Model 85, 85-F

R. F. By-pass No. 1

- 1—Quality condenser.
- 2—2nd-detector—A. F. coupling condenser.
- 3—Phone condenser.
- 4—2nd-detector bias by-pass.

R. F. By-pass No. 2

- 5—A. F. bias by-pass.
- 6—I. F. bias by-pass.
- 7—Tracking condenser.
- 8—Control-plate by-pass.

R. F. By-pass No. 3

- 9—1st-detector—I. F. screen by-pass.
- 10—2nd-detector filter condenser.
- 11—1st-detector filter condenser
- 12—1st-detector bias by-pass.

Tone-control Condenser (on front panel)

- Two top contacts—2nd-detector screen by-pass and oscillator plate-circuit by-pass.
- Two bottom contacts—tone-control condensers.

CONDENSERS

RF Bypass # 1
19160 Early
19980 Late
All 400 volts

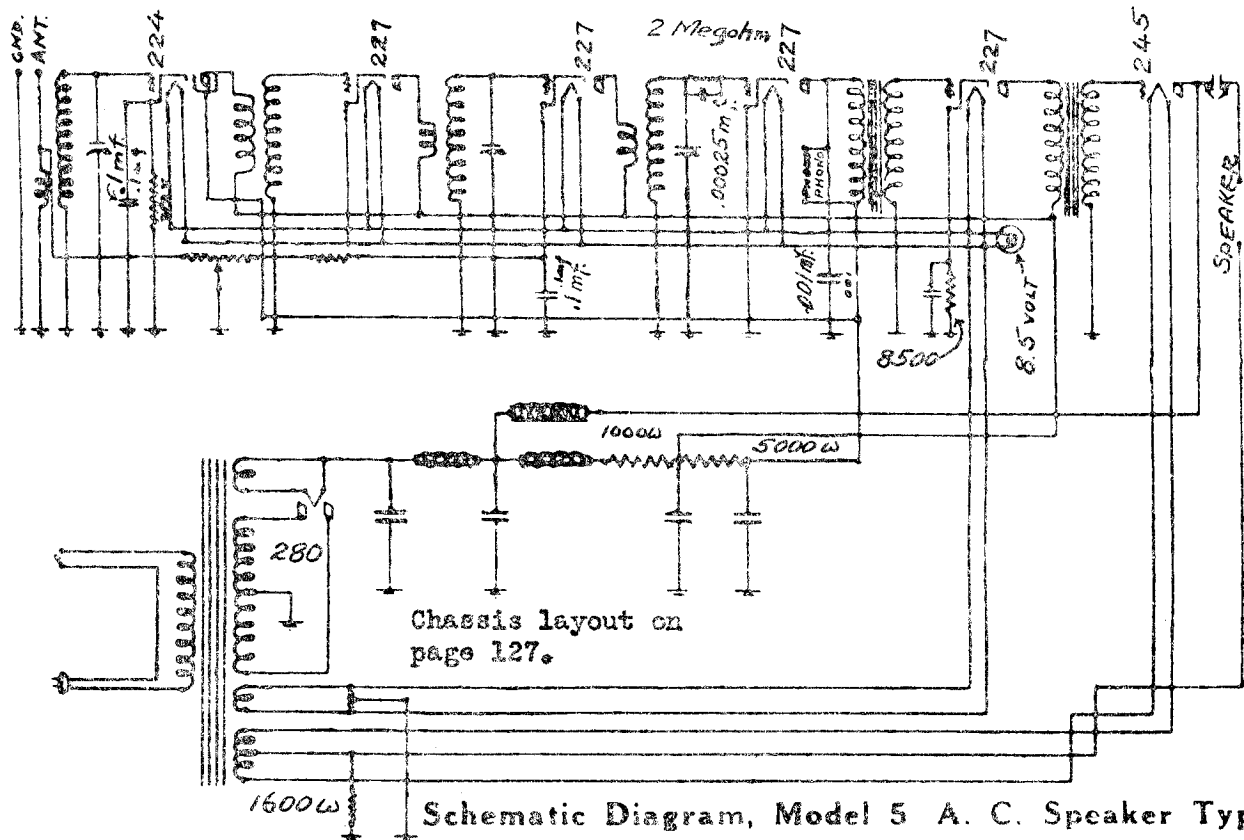
RF Bypass # 2
19150 Early
19990 Late
All 400 volts

RF Bypass # 3
15262
All 400 volts

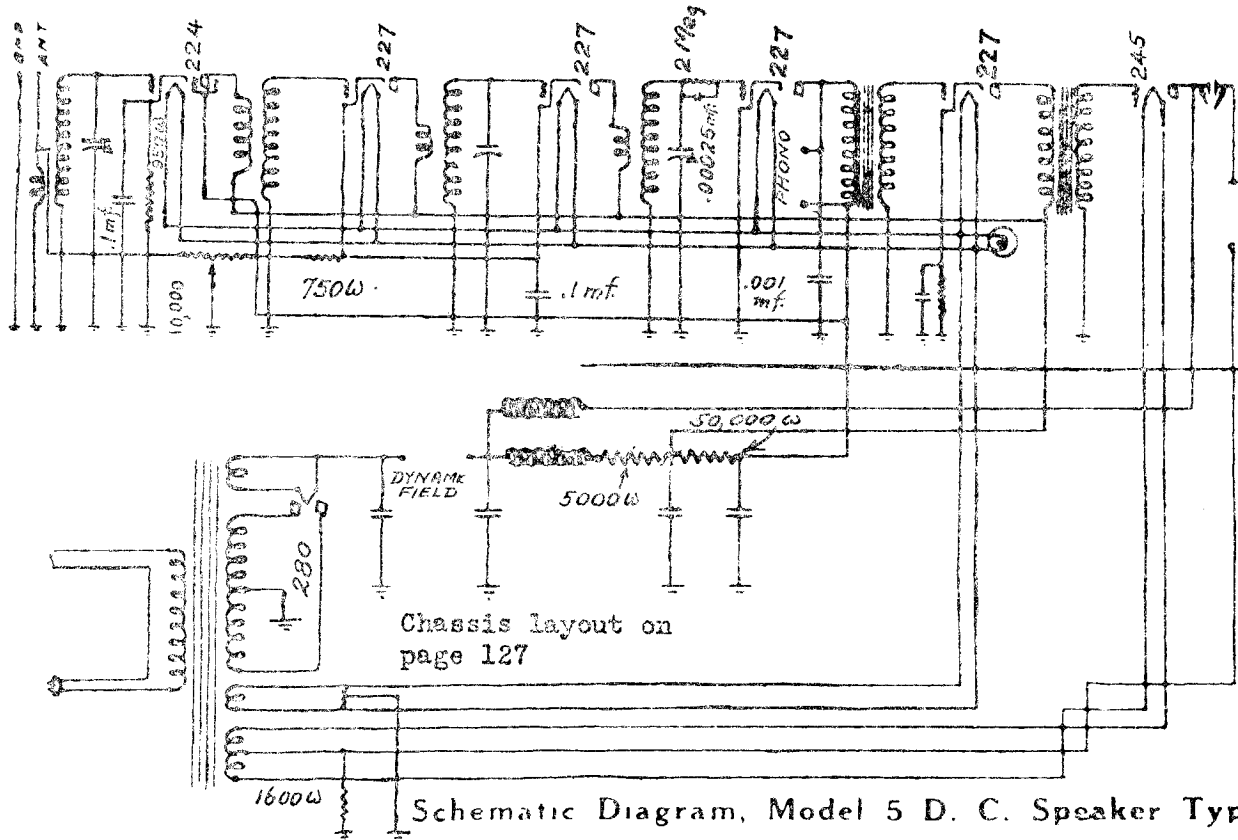
Tone Control
16490 Early
20010 Late
All 100 volts

ATCHISON RADIO MFG. CO.

MODEL 5 AC
MODEL 5 DC



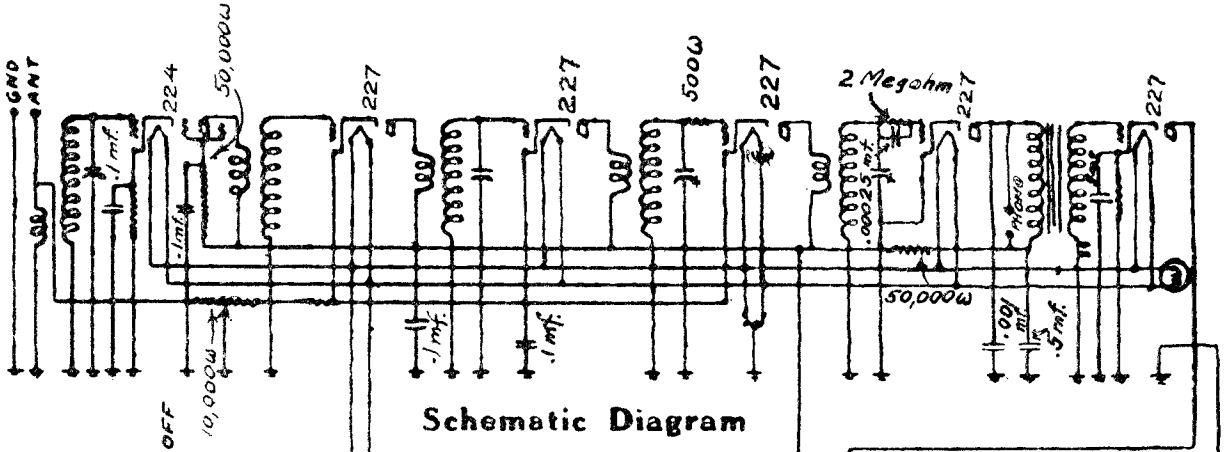
Schematic Diagram, Model 5 A. C. Speaker Type



Schematic Diagram, Model 5 D. C. Speaker Type

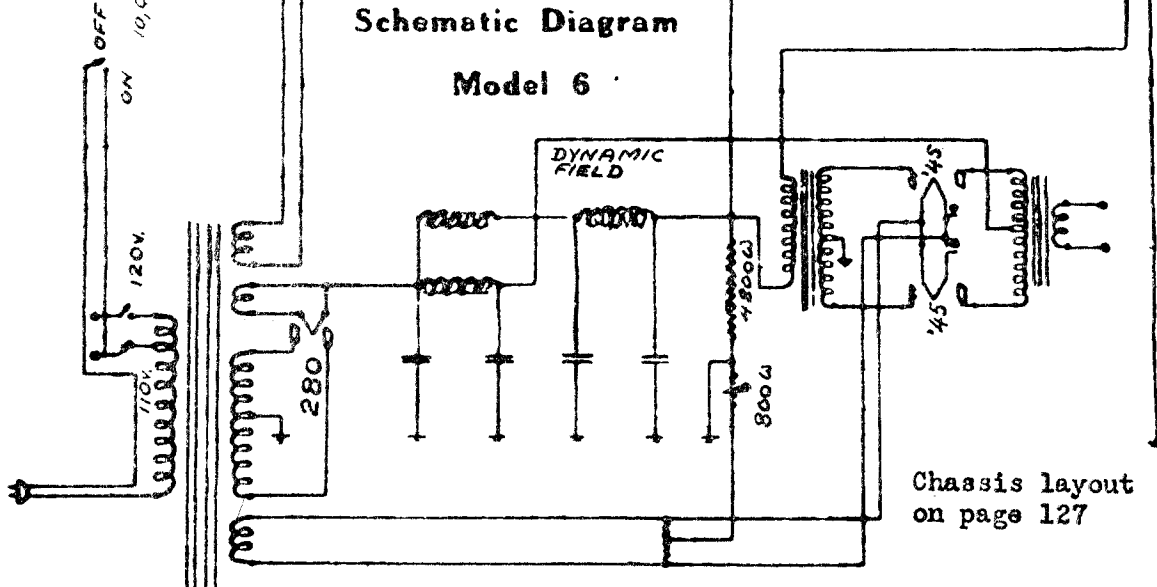
MODEL 6 AC

ATCHISON RADIO MFG. CO.

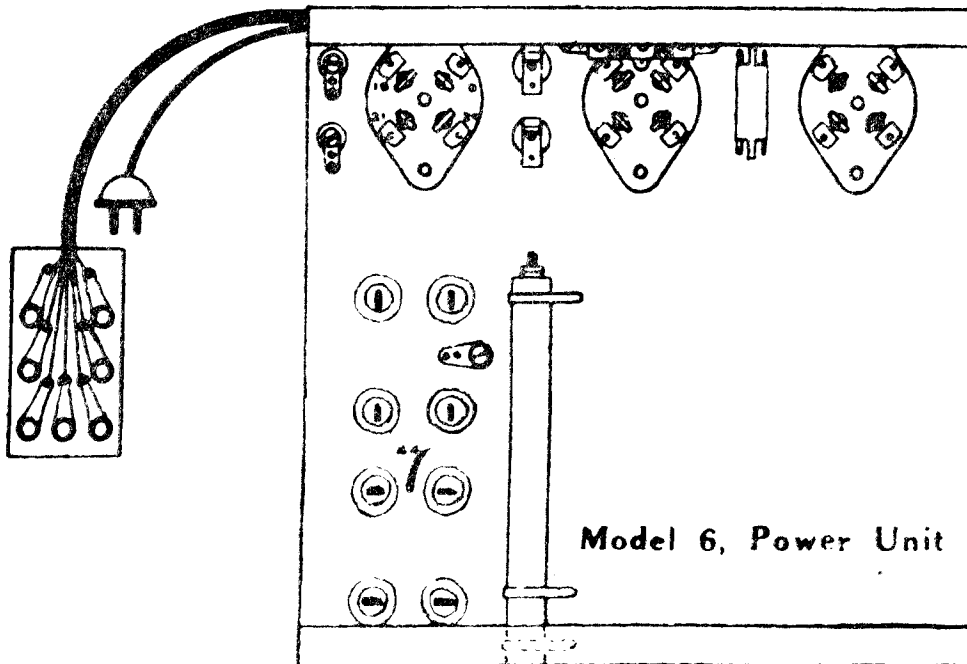


Schematic Diagram

Model 6



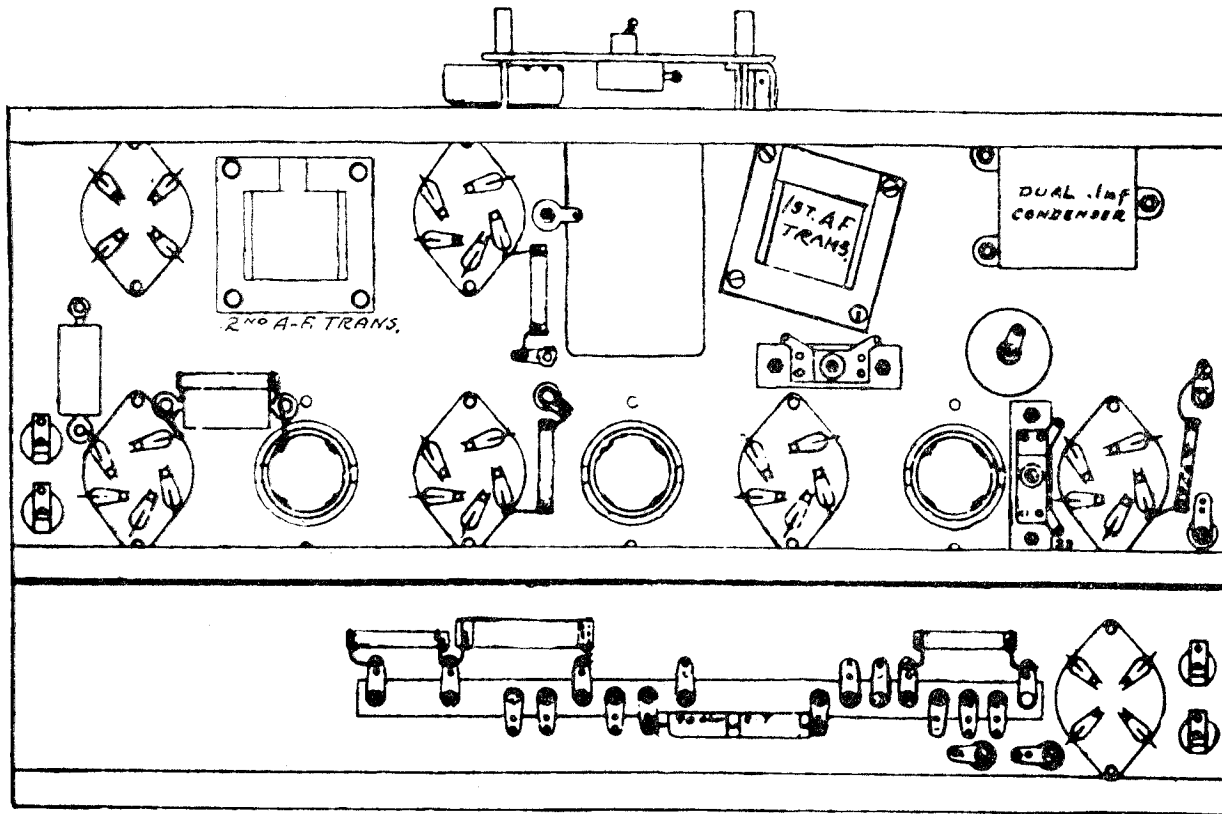
Chassis layout on page 127



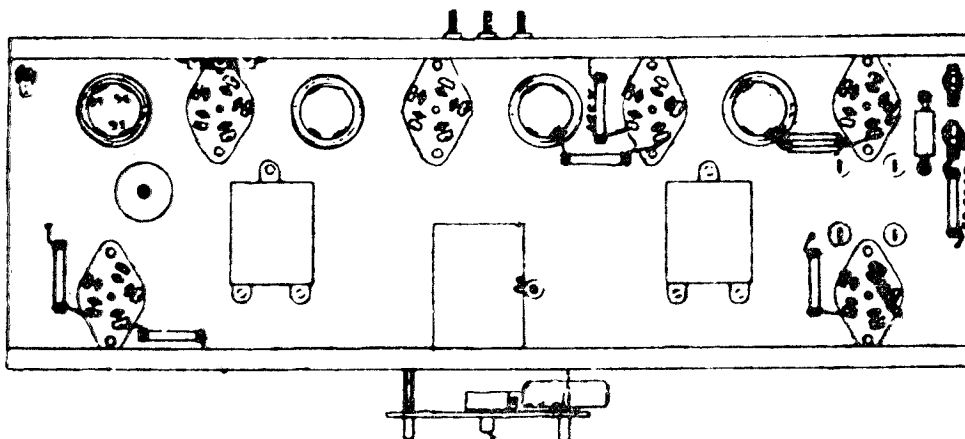
Model 6, Power Unit

ATCHISON RADIO MFG. CO.

MODEL 5 Chassis
MODEL 6 Chassis



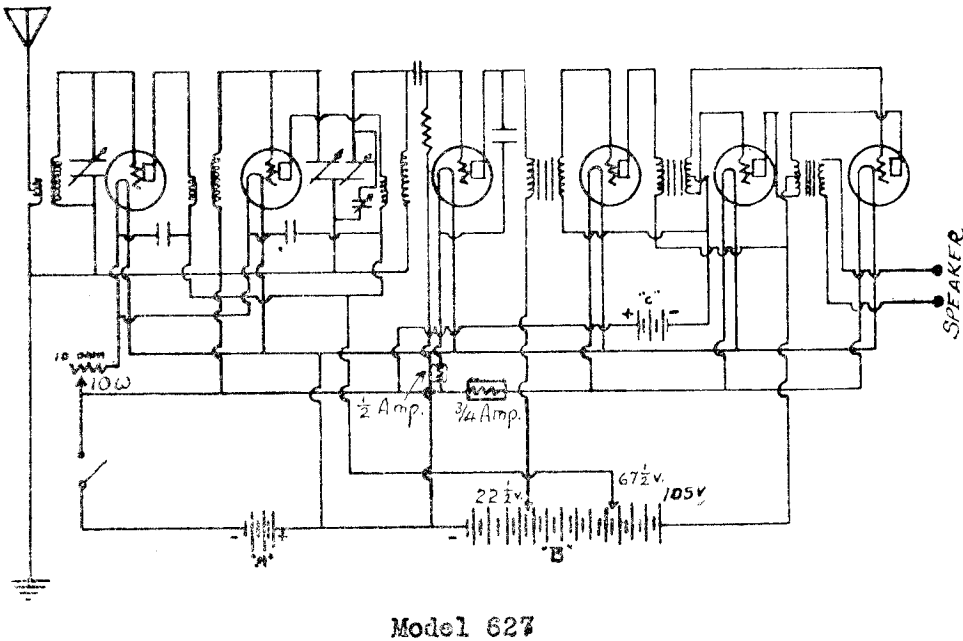
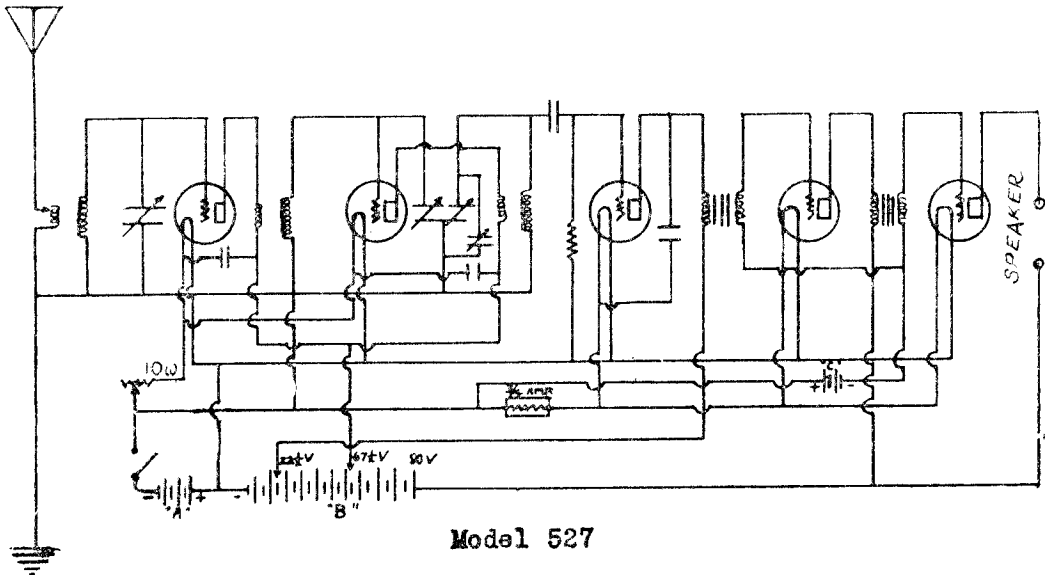
Model 5, Chassis Arrangement



Model 6, Chassis Arrangement

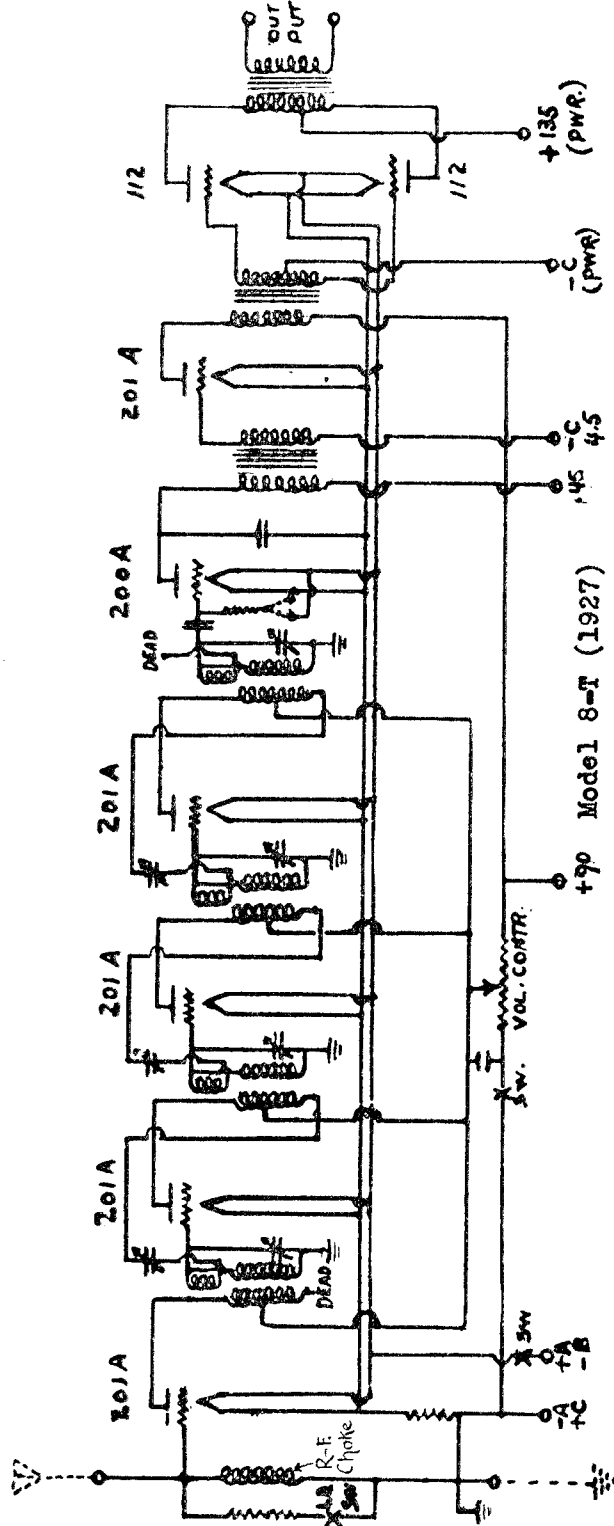
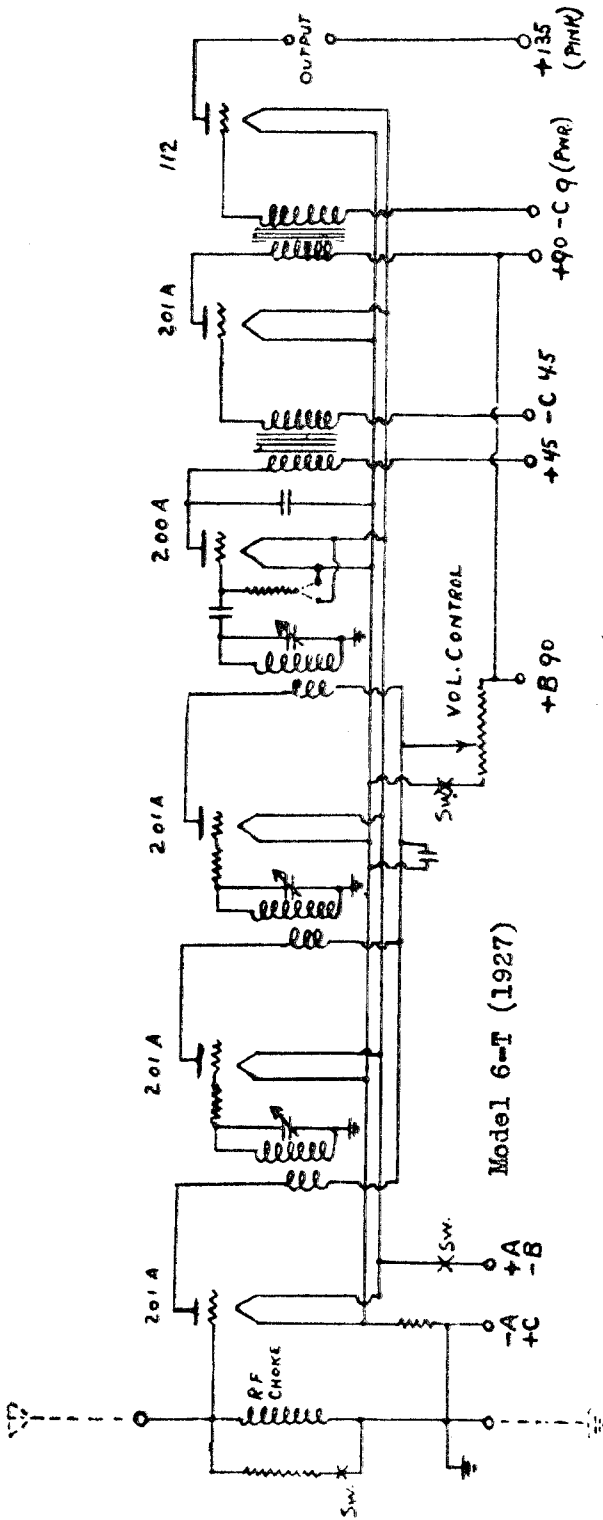
AUDIOLA RADIO CO.

MODEL 527
MODEL 627



MODEL 6-T (1927)
 MODEL 8-T (1927)

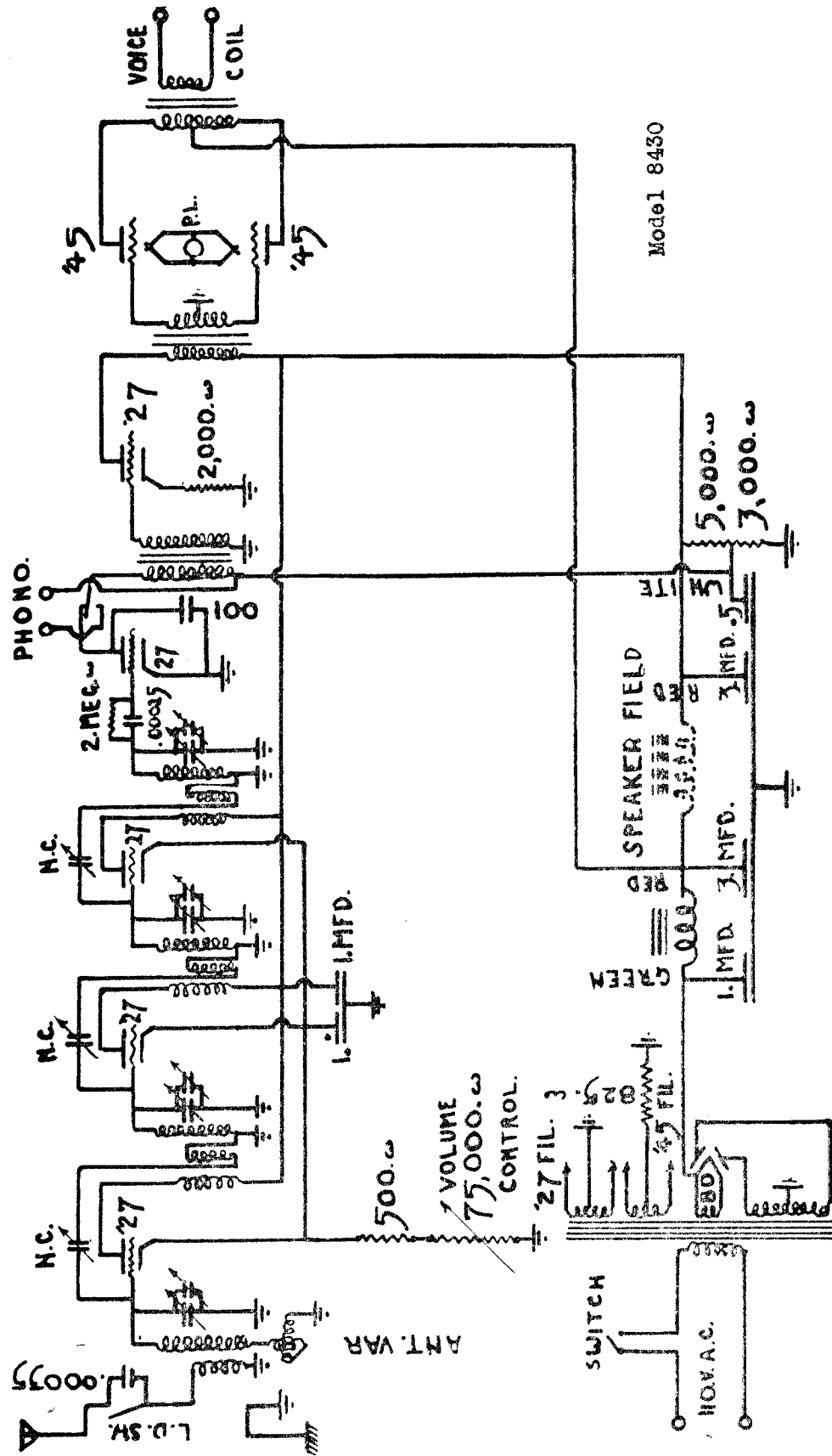
AUDIOLA RADIO CO.



AUDIOLA RADIO CO.

MODEL 8430

Model 8430



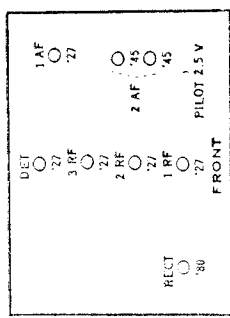
Line Voltage 115 Volts. Volume control Maximum. Watts. 90-100.

Plt. Crnt.
5. - 8. ma
2. - 4.
4. - 6.
22.-32.
95.-105.

R-F	Det.	A-F (1st)	A-F (2nd)	Rect.	Fil.	Plate	Grid
					2.4	135-150	8-10
					2.4	50-50*	
					2.4	135-150	10-14
					2.4	210-250	40-50
					4.7-5.2		

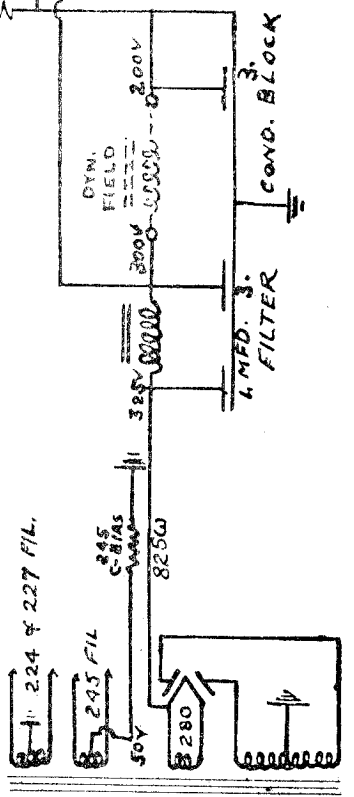
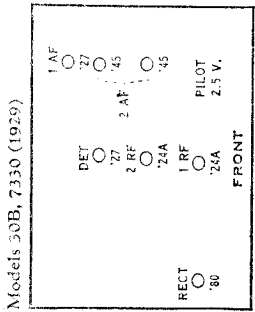
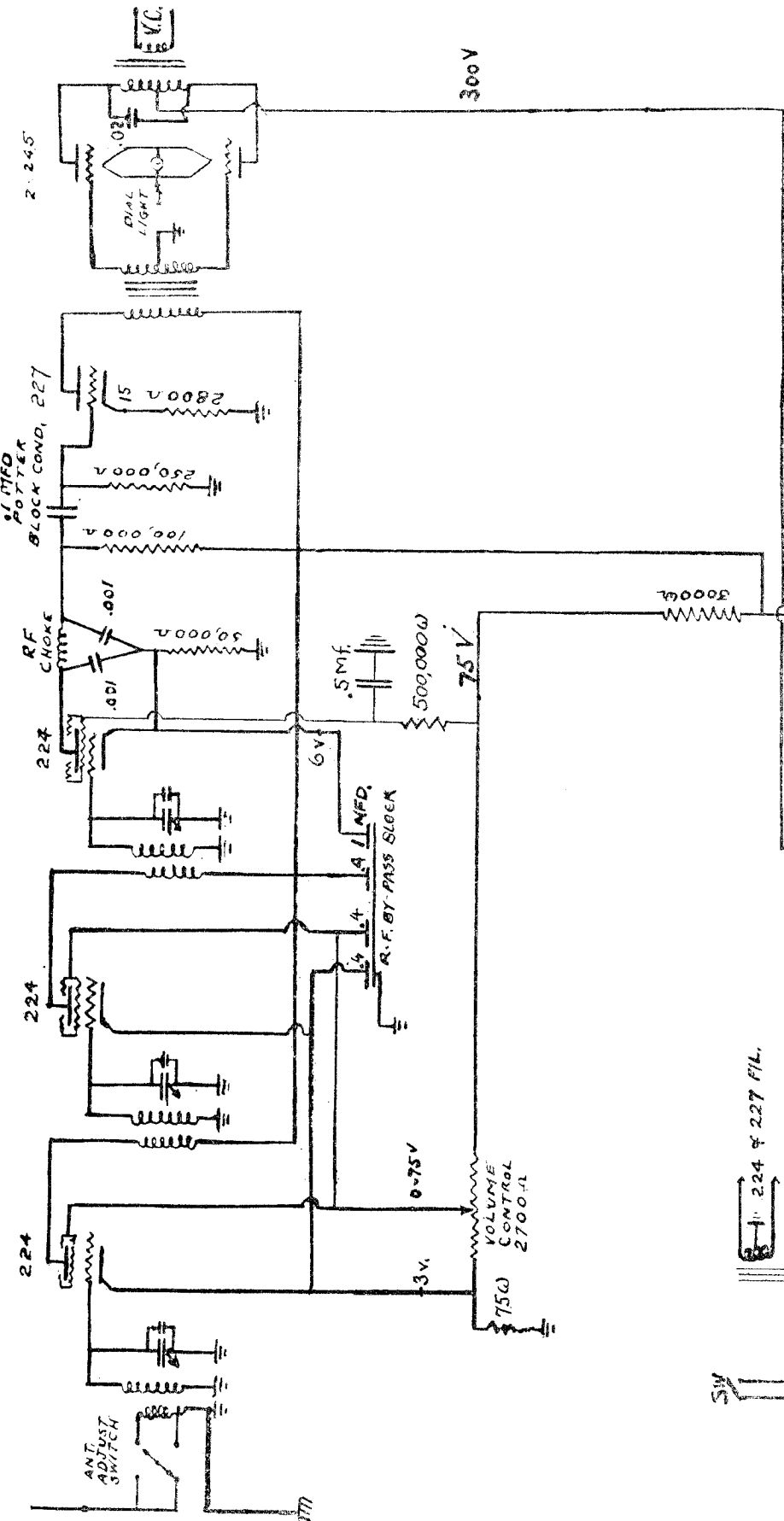
Voltage across field 80 - 100. Field current 40-50 ma.

Model 8430 (1929)



MODEL 30-B
MODEL 7330

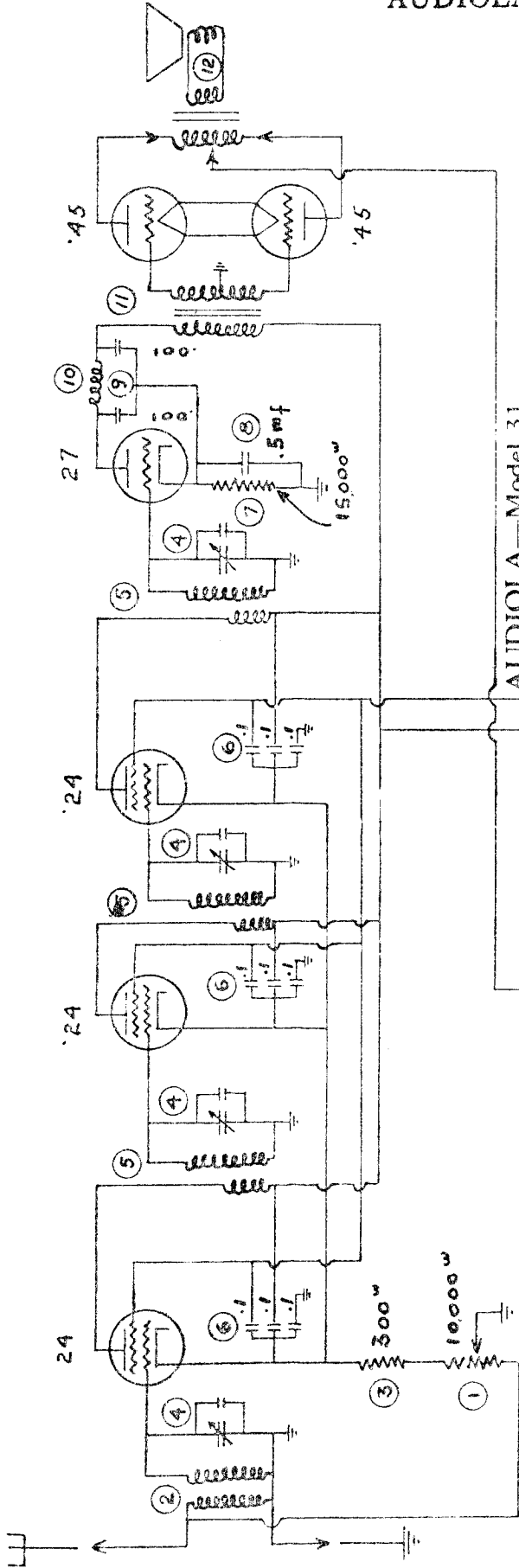
AUDIOLA RADIO CO.



LABELLED
VOLTAGES
APPROXIMATE
TO GROUND

AUDIOLA RADIO CO.

MODEL '31 Series

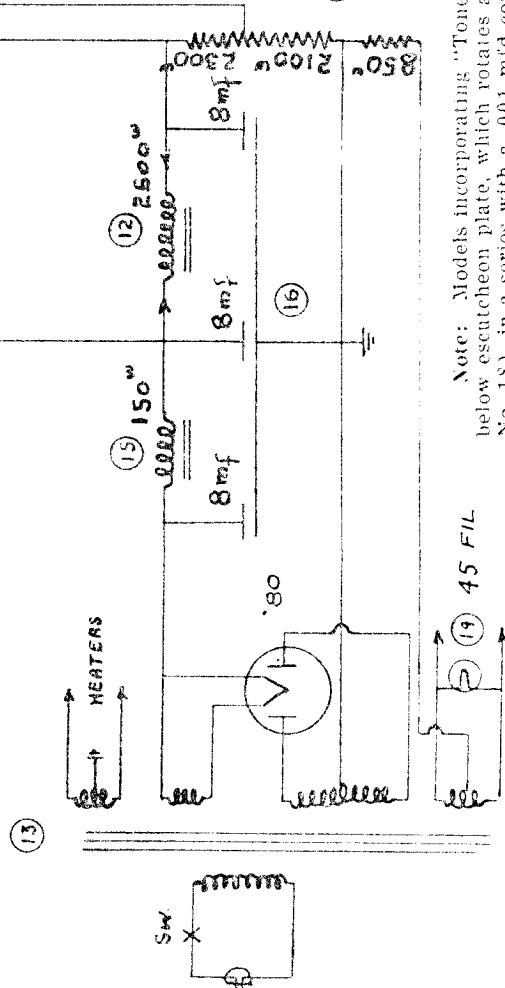


AUDIOLA—Model 31
Line Voltage 115

TUBE IN ORDER TESTED	TYPE OF TUBE	POSITION IN SET	FILAMENT AMPS	HEATER	OPERATING VOLTAGES					MILLIAMPERED		
					CONTROL GRID	SCREEN GRID	CATHODE	SCREEN GRID	PLATE	TUBE CURRENT	PLATE CURRENT	
1	224	1 R.F.	2.4	164	3	.75	3	-	2.6	6.0	3.2	
2	224	2 R.F.	2.4	164	3	.75	3	-	2.6	6.0	3.2	
3	224	3 R.F.	2.4	164	3	.75	3	-	2.6	6.0	3.2	
4	227	Det.	2.4	150	-	1.5	15	-	1.0	1.2	.2	
5	245	PP-AF	2.4	250	-	48	-	-	29.0	32.0	4.0	
6	248	PP-AF	2.4	250	-	48	-	-	29.0	32.0	4.0	
7	Z90	Rect.	4.5	276	-	-	-	-	55	-	-	

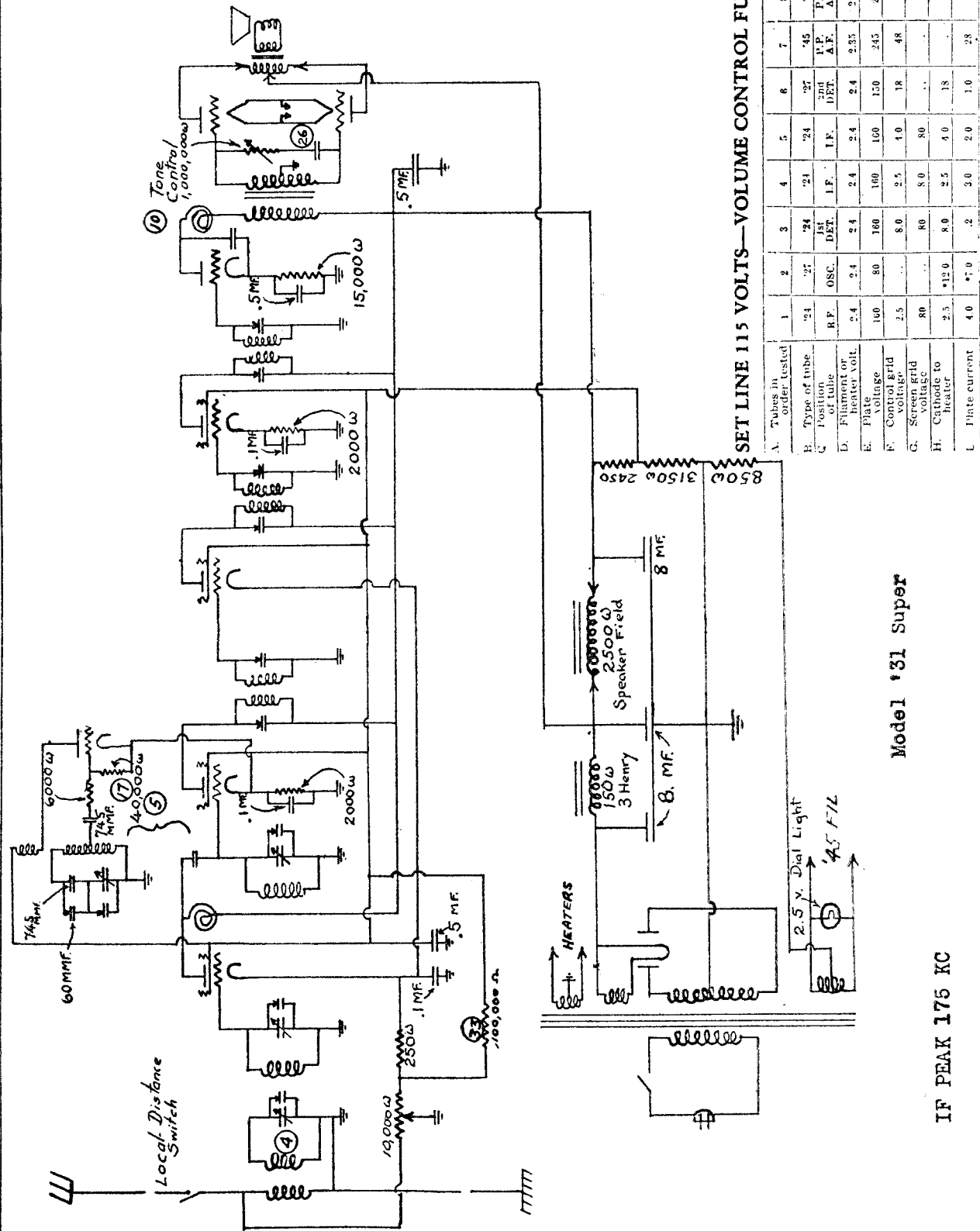
Model 131 Series

Note: Models incorporating "Tone Control" have a third knob in center below escutcheon plate, which rotates a one megohm variable resistor (part No 18) in a series with a .001 mid condenser (part No. 19) connected grid to grid in the push-pull stage



MODEL '31 Super

AUDIOLA RADIO CO.



SET LINE 115 VOLTS—VOLUME CONTROL FULL ON

A. Tubes in order tested	1	2	3	4	5	6	7	8	9
B. Type of tube	'24	'27	'24	'24	'24	'27	'45	'45	'80
C. Position of tube	R.F.	OSC.	1st DET.	I.F.	I.F.	2nd DET.	P.P. A.F.	P.P. A.F.	RECT.
D. Filament or heater volt.	2.4	2.4	2.4	2.4	2.4	2.4	2.35	2.25	4.7
E. Plate voltage	160	80	160	160	100	150	245	215	200
F. Control grid voltage	2.5		8.0	2.5	1.0	1.8	4.8	4.8	
G. Screen grid voltage	80		80	8.0	80				
H. Cathode to heater	2.5	*12.0	8.0	2.5	4.0	1.8			
L. Plate current	4.0	*7.0	.2	3.0	2.0	1.0	2.8	2.8	5.8

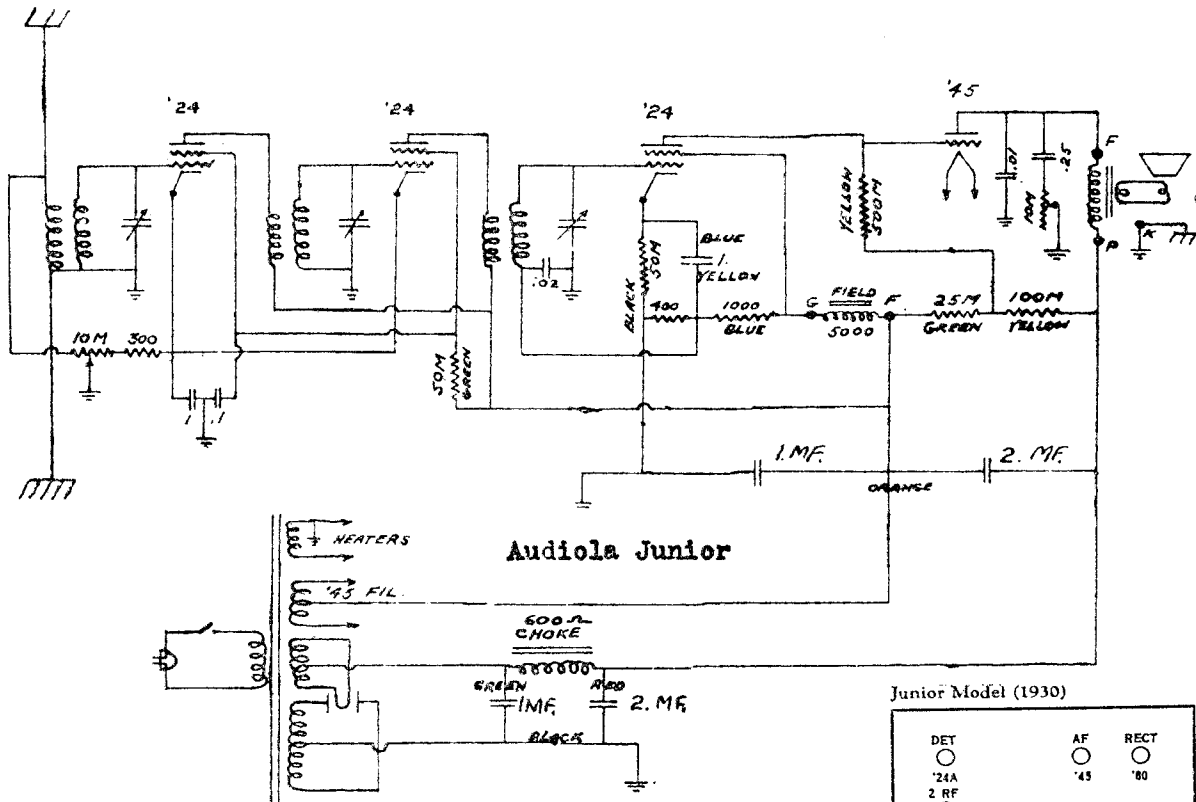
*Non-Oscillating.

Model '31 Super

IF PEAK 175 KC

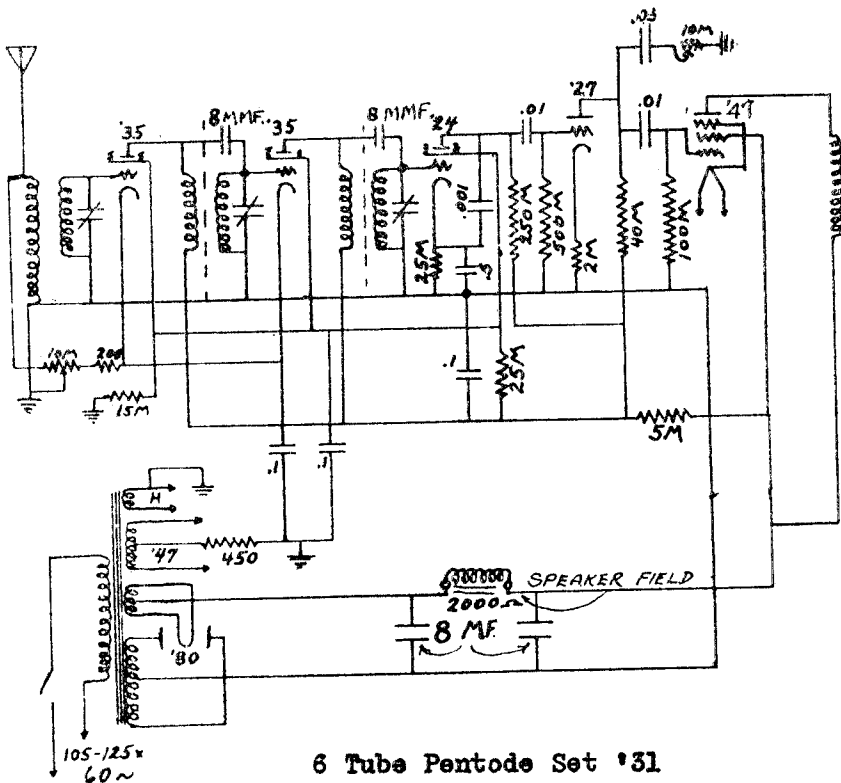
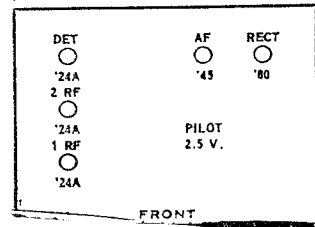
AUDIOLA RADIO CO.

MODEL Audiola Jr.
MODEL 6 Tube Pentode
'31



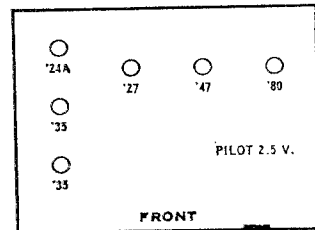
Audiola Junior

Junior Model (1930)



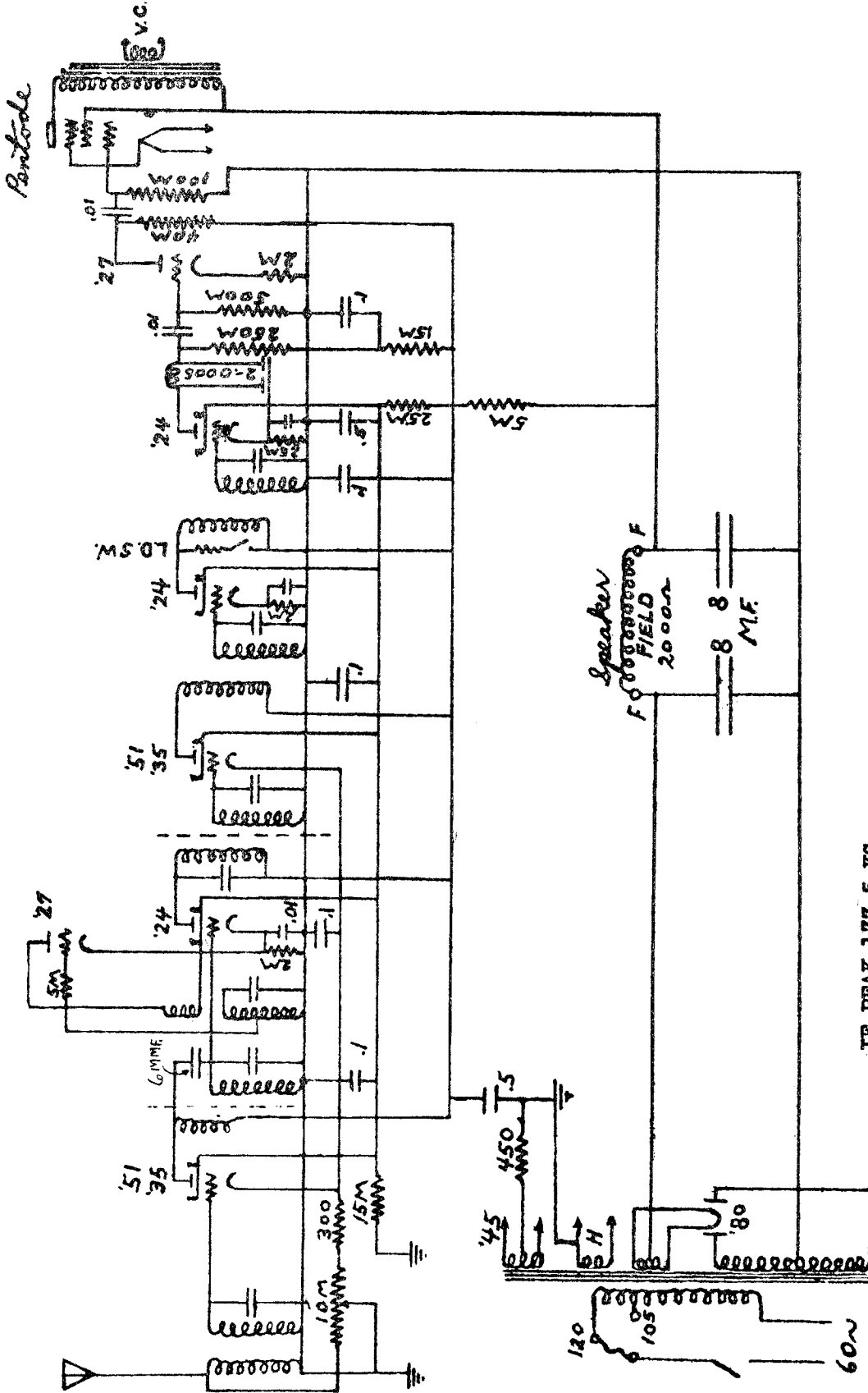
6 Tube Pentode Set '31

Model 6 Tube Pentode Set (1931)



AUDIOLA RADIO CO.

MODEL 9 Tube Super
(1) Pentode '31

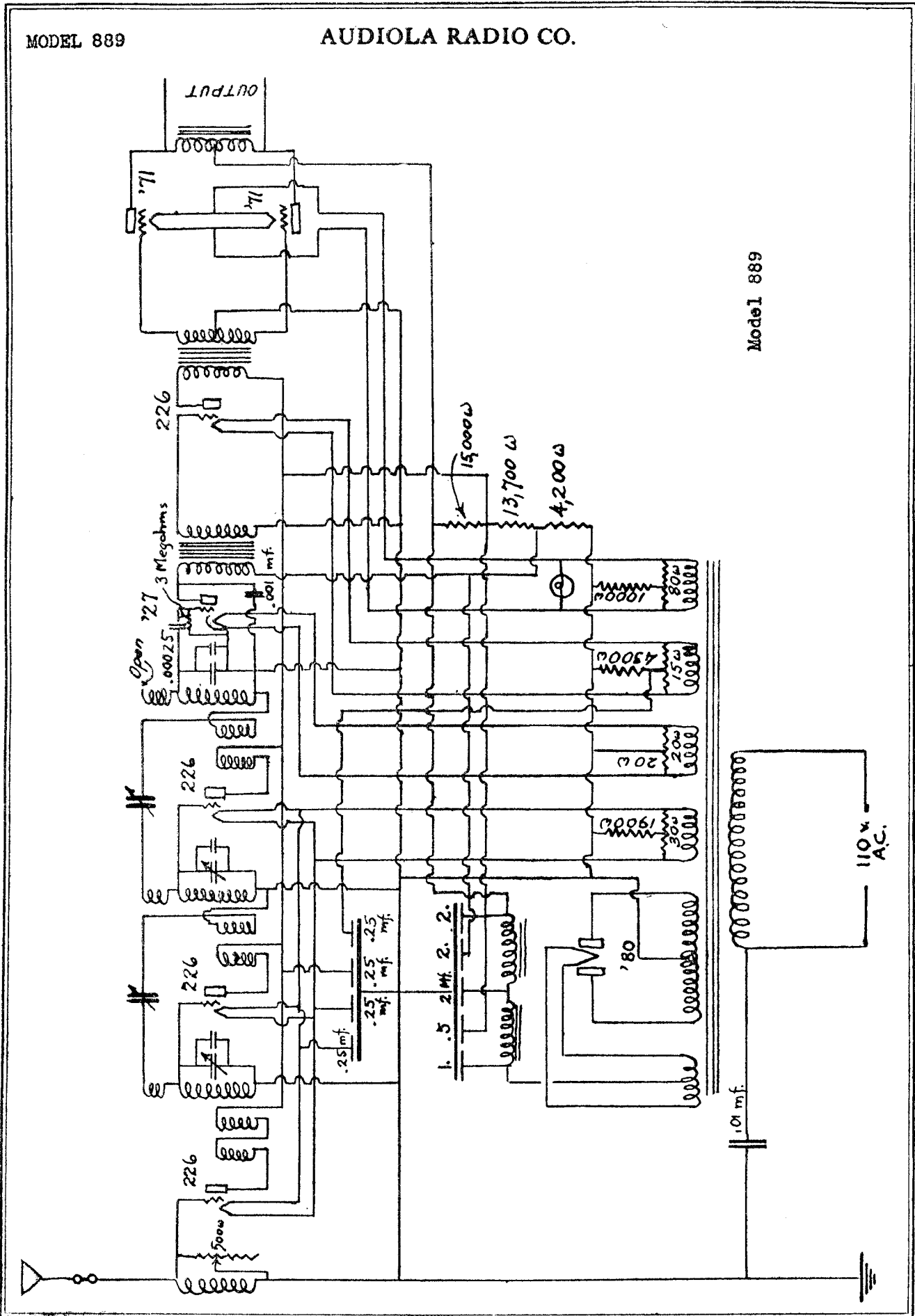


IF PEAK 177.5 KC

AUDIOLA RADIO CO.

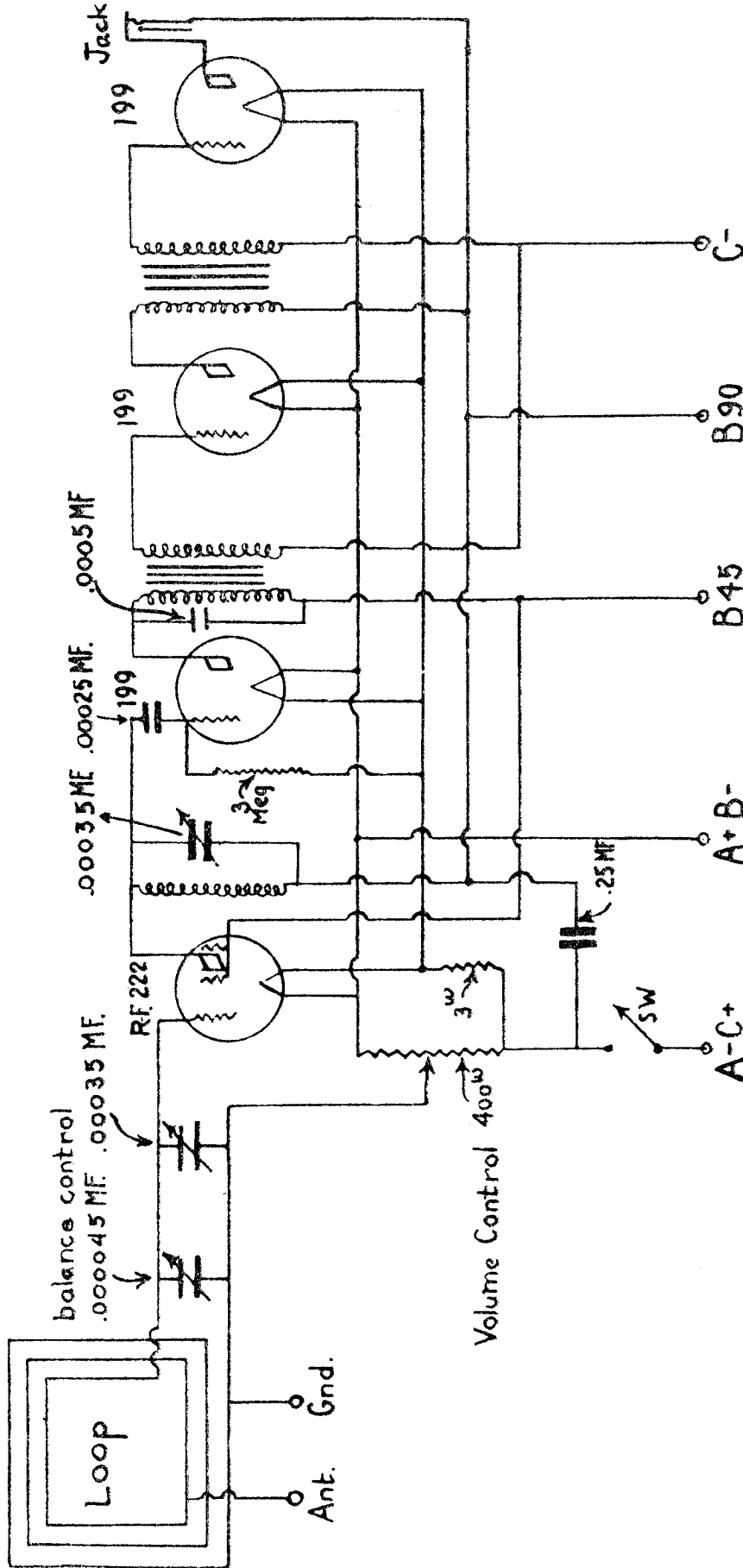
MODEL 889

Model 889



AUTOMATIC RADIO MFG. CO.

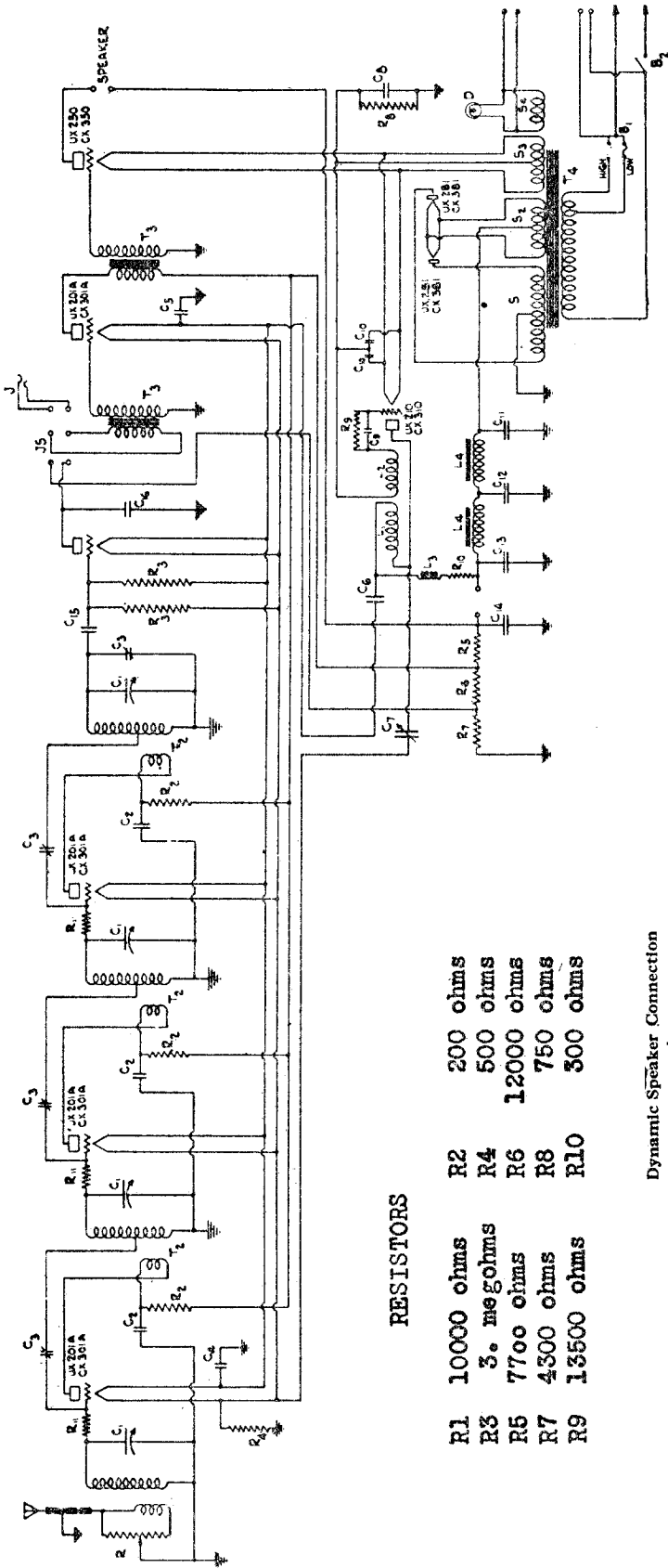
MODEL "TOM THUMB"
Screen Grid Four
Battery



Schematic diagram of "Tom Thumb" screen grid four
(battery)

BALKEIT RADIO CO.

MODEL B-7 and B-9



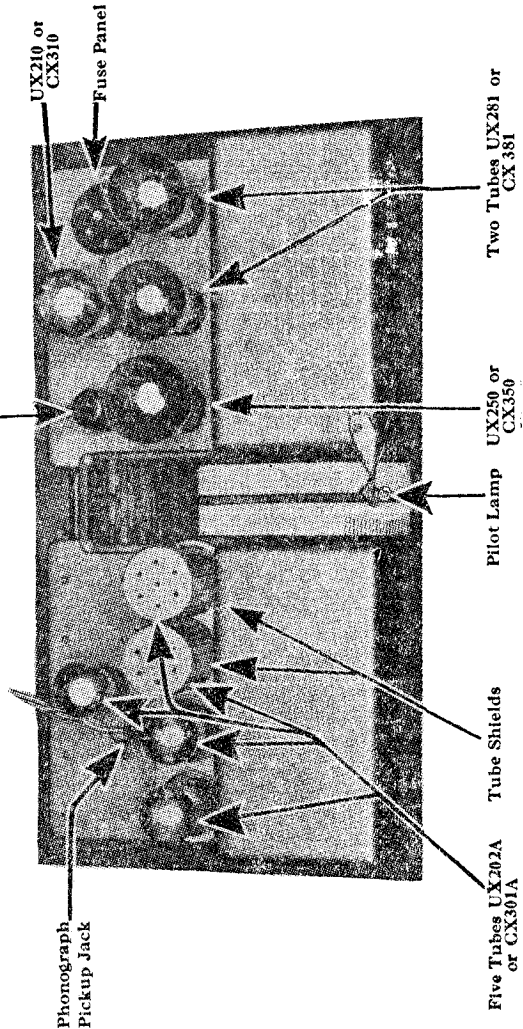
RESISTORS

- R1 10000 ohms
- R2 200 ohms
- R3 3. megohms
- R4 500 ohms
- R5 7700 ohms
- R6 12000 ohms
- R7 4300 ohms
- R8 750 ohms
- R9 13500 ohms
- R10 300 ohms

CONDENSERS

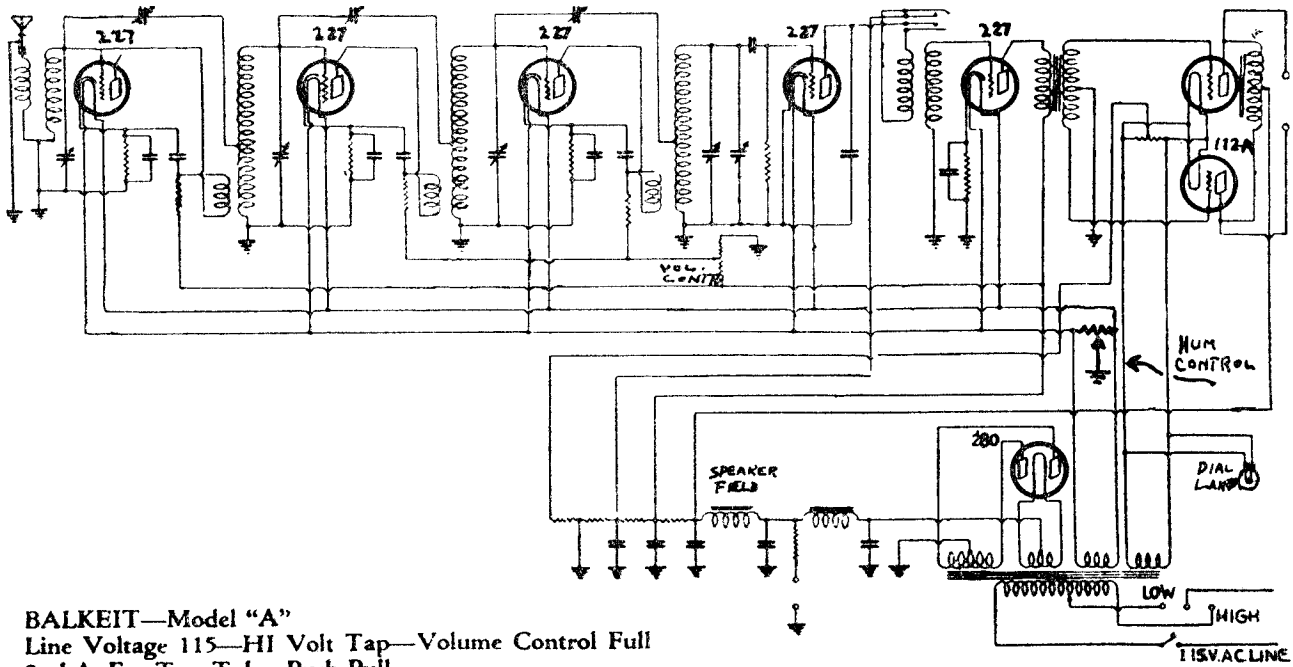
- C1 .00037 mfd
- C2 .1 mfd
- C3 .00002 mfd
- C4 .5 mfd
- C5 1. mfd
- C6 .006 mfd
- C7 .00025 mfd
- C8 2. mfd
- C9 .0025 mfd
- C10 .002 mfd
- C11 2. mfd
- C12 3. mfd
- C13 4. mfd
- C14 4. mfd
- C15 .00015 mfd

Dynamic Speaker Connection



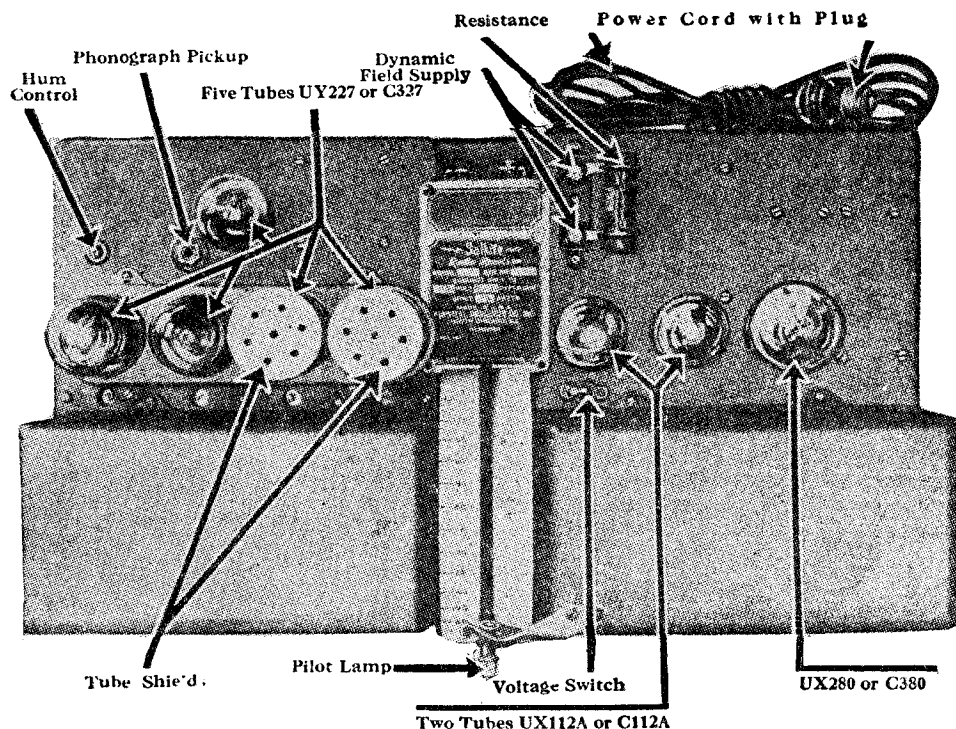
MODEL A-3, A-5, A-7

BALKEIT RADIO CO.



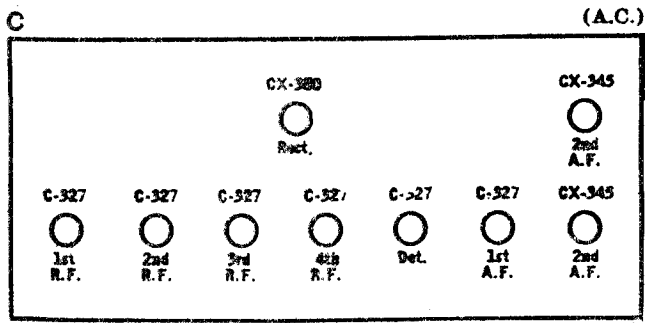
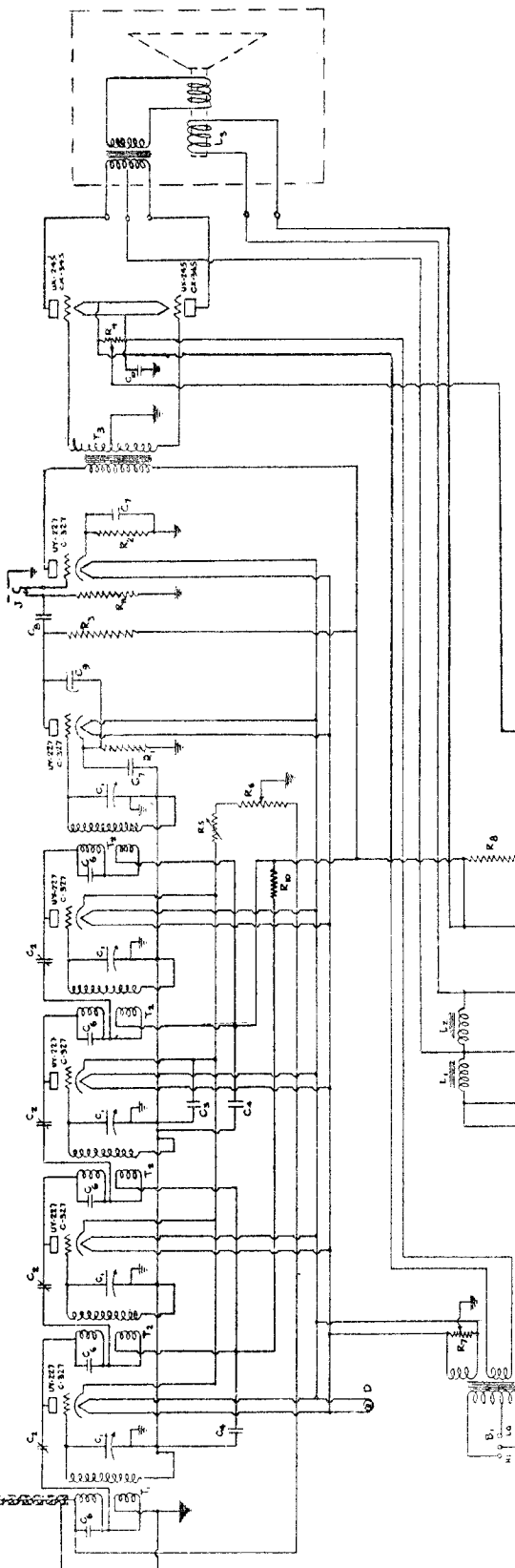
BALKEIT—Model "A"
 Line Voltage 115—HI Volt Tap—Volume Control Full
 2nd A. F.—Two Tubes Push Pull

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST AF DET. ETC.	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE VOLTS	PLATE M.A. TEST	PLATE I.A. CHANGE	
1	227	1st. R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4	
2	227	2nd. R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4	
3	227	3rd. R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4	
4	227	Detector	2.3	46	2.1	30	0	-	2.2	2.4	0.2	
5	227	1st. A.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4	
6	112A	2nd. A.F.	4.7	142	4.5	132	9.5	-	9.0	13.8	4.8	
7	112A	2nd. A.F.	4.7	142	4.5	132	9.5	-	9.0	13.8	4.8	
8	280	Rectifier	-	-	4.5	-	-	-	32.0	-	-	



MODEL "C"

BALKEIT RADIO CO.



BALKEIT—Model "C"
 Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On—Use 120 V. Scale—2nd Audio 2 No. 245 in Parallel

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1 BY S.P. DET. ETC.	REAR PANEL PLUG IN SOCKET OF SET															
			TUBE OUT		A VOLTS		B VOLTS		C VOLTS		E VOLTS		TUBES IN TESTER					
			A	B	A	B	A	B	A	B	HEATER	CONTROL	GRID	PLATE	FLYBACK	FLYBACK	SCREEN	
1	6X327	1st RF	2.36	118	2.4	117	10	10	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	6X327	2nd RF	2.36	118	2.4	117	10	10	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	6X327	3rd RF	2.36	118	2.4	117	10	10	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	6X327	4th RF	2.36	118	2.4	117	10	10	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	6X327	Det.	2.36	68	2.4	68	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6	6X327	1st AF	2.36	118	2.4	117	2	7.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	6X345	2nd AF	2.4	-	2.3	225	41	-	24	28	4.0	-	-	-	-	-	-	
8	6X80	Rect.	-	-	4.75	-	-	-	94	-	-	-	-	-	-	-	-	

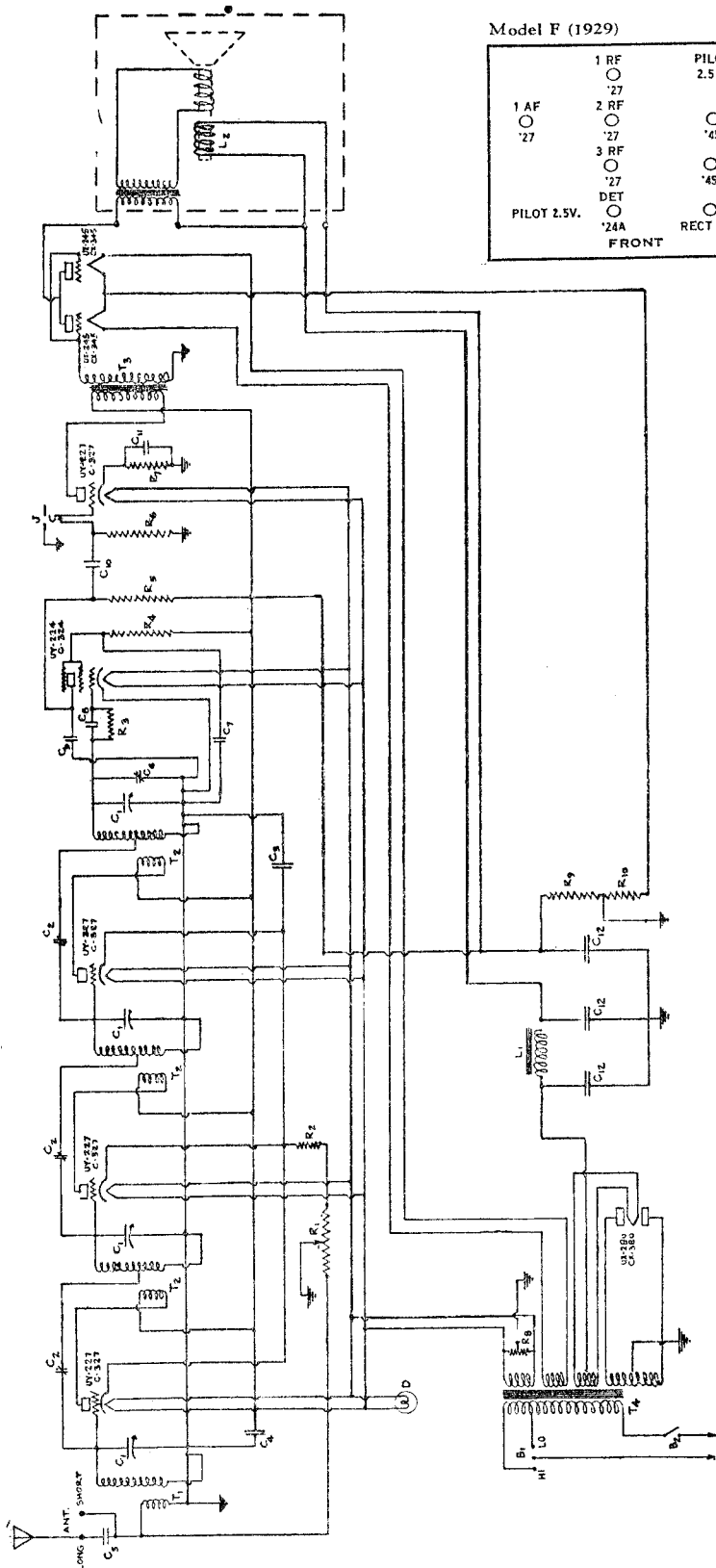
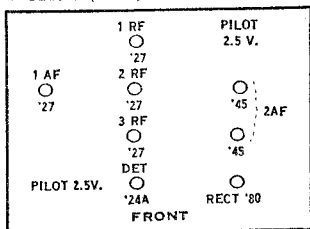
- C-1 Tuning Condenser
- C-2 Neutralizing Condenser
- C-3 R. F. Grid Bias Condenser .25 MF
- C-4 R. F. Plate By-Pass Condenser .25 MF
- C-5 Antenna Condenser .00025 MF
- C-6 Primary By-Pass Condenser .00025 MF
- C-7 Grid Bias Condenser 1.0 MF
- C-8 1st Audio Coupling Condenser 0.1 MF
- C-9 Detector Plate Condenser .002 MF
- C-10 By-Pass Condenser .25 MF
- C-11 Filter Condenser 2 MF
- C-12 Filter Condenser 2 MF
- C-13 Filter Condenser 2 MF
- C-14 Filter Condenser 1 MF
- J Phonograph Jack
- L-1 Filter Choke
- L-2 Filter Choke
- L-3 Speaker Field
- R-1 Detector Grid Bias Resistance 25,000 Ohms
- R-2 1st Audio Grid Bias Resistance 1,750 Ohms
- R-3 1st Audio Coupling Resistance .1 Megohm
- R-4 Mid-Tap Resistance 20 Ohms
- R-5 R. F. Grid Bias Resistance 2,000 Ohms
- R-6 Volume Control 15,000 Ohms
- R-7 Hum Control 20 Ohms
- R-8 Loss Current Resistance 3,600 Ohms
- R-9 245 Grid Bias Resistance 770 Ohms
- R-10 R. F. Plate Resistance
- R-11 1st Audio Grid Resistance .5 Megohm
- T-1 Antenna Transformer
- T-2 R. F. Interstage Transformer
- T-3 Input Push-Pull Transformer
- T-4 Power Transformer
- B-1 HI-LO S.P.D.T. Toggle Switch
- B-2 S.P.S.T. Toggle Switch
- D' Dial Lamp

Chassis layout on next page.

MODEL "F"

BALKEIT RADIO CO.

Model F (1929)



BALKEIT—Model "F"
 Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On #Last Stage Is 2 No. 245 in Parallel

TUBE NO.	TYPE	POSITION OF TUBE IN SET	TUBE OFF		TUBE IN TESTER		PLATE NUMBER	PLATE NUMBER		
			A	B	A	B			IN ORDER OF CONNECTION	IN ORDER OF CONNECTION
1	2A7	1A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
2	2A7	2A4 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
3	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
4	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
5	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
6	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
7	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
8	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
9	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
10	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
11	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
12	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
13	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
14	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
15	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
16	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
17	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
18	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
19	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
20	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
21	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
22	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
23	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
24	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
25	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
26	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
27	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
28	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
29	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
30	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
31	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
32	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
33	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
34	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
35	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
36	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
37	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
38	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
39	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
40	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
41	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
42	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
43	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
44	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
45	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
46	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
47	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
48	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
49	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0
50	2A7	3A1 RF	8.4	11.0	2.3	11.6	7	7	4.2	5.0

- C₁ Tuning Condenser.
- C₂ Neutralizing Condenser.
- C₃ R.F. Grid Bias Condenser .25 MF.
- C₄ R.F. Plate By-Pass Condenser .25 MF.
- C₅ Antenna Condenser .00025 MF.
- C₆ Det. Padding Condenser.
- C₇ Det. Screen Grid Bias Condenser .25 MF.
- C₈ Det. Control Grid Condenser .0001 MF.
- C₉ Det. Plate Condenser .0005 MF.
- C₁₀ 1st Audio Coupling Condenser 0.1 MF.
- C₁₁ 1st Audio Grid Condenser 0.5 MF.
- C₁₂ Filter Condensers 8.0 MF Each.
- L₁ Filter Choke.
- L₂ Speaker Field 2500 Ohms.
- J Phonograph Jack.
- D Dial Lamp.
- R₁ Volume Control 15,000 Ohms.
- R₂ R.F. Grid Bias Resistance 620 Ohms.
- R₃ Det. Control Grid Resistance .5 Megohm
- R₄ Det. Screen Grid Resistance .5 Megohm
- R₅ 1st Audio Coupling Resistance .1 Megohm.
- R₆ 1st Audio Grid Resistance .5 Megohm.
- R₇ 1st Audio Grid Bias Resistance 1750 Ohms.
- R₈ Hum Control 20 Ohms.
- R₉ Loss Current Resistance 4500 Ohms
- R₁₀ 245 Grid Bias Resistance 650 Ohms
- T₁ Antenna Transformer.
- T₂ R.F. Inter stage Transformer.
- T₃ Input Audio Transformer
- T₄ Power Transformer.
- B₁ Hi-Lo S.P.D.T. Toggle Switch.
- B₂ S.P.S.T. Toggle Switch.

Chassis layout on next page

BALKITE PRODUCTS CO.

SPECIFICATIONS

Balkite Models and Specifications

Current Models

Balkite AB 6-180, "A" and "B" Current Supply

	Max. Output	
"A"	6 volts	2 amperes
"B"	180	55 m.a.

B Voltages, 180, 135, 90, 67½, 45 or 22½

Consumption: watts 127
Dimensions: 10¼" x 18½" x 7¾"

Balkite AB 6-135, "A" and "B" Current Supply.

	Max. Output	
"A"	6 volts	2 amperes
"B"	135	40 m.a.

B Voltages, 135, 90, 67½, 45 or 22½

Consumption: watts 117
Dimensions: 10¼" x 18½" x 7¾"

Balkite A-6, "A" Current Supply.

6 volts	Output	2 amperes
---------	--------	-----------

Consumption: watts 100
Dimensions: 6" x 10¾" x 8¾"

Balkite B-180, "B" Current Supply.

180 volts	Output	55 m.a.
-----------	--------	---------

Voltages, 180, 135, 90, 67½ and 45 or 22½

Consumption: watts 27
Dimensions 4½" x 12¾" x 8¾"

Balkite B-135, "B" Current Supply.

135 volts	Output	40 m.a.
-----------	--------	---------

Voltages, 135, 90, 67½ and 45 or 22½

Consumption: watts 17
Dimensions: 4½" x 8¼" x 8½"

Balkite BW, "B" Current Supply.

90 volts	Output	18 m.a.
----------	--------	---------

Voltage, 90 and 45 or 22½

Consumption: watts 6
Dimensions: 3⅝" x 7⅝" x 8¼"

Balkite Model J Charger, Full Rate and Trickle Charger

Charging Rates

High Rate, 2½ amperes
Low Rate, ½ ampere

Consumption: watts 60
Dimensions: 5⅜" x 8½" x 7⅝"

Balkite Model N Trickle Charger, Trickle Charger

Charging Rates

High Rate, .8 ampere
Low Rate, .5 ampere

Consumption: watts 20
Dimensions: 4⅛" x 7½" x 6¼"

Balkite Model K Trickle Charger, Trickle Charger

Charging Rate, .5 ampere

Consumption: watts 15
Dimensions: 2¾" x 5½" x 5¼"

Previous Models

Balkite BY, "B" Current Supply.

150 volts	Output	40 milliamperes
-----------	--------	-----------------

Voltages, 150, 135, 90, 67½ and 45 or 22½

Consumption: watts 17
Dimensions: 4½" x 12¾" x 8¾"

Balkite BX, "B" Current Supply.

135 volts	Output	30 milliamperes
-----------	--------	-----------------

Voltages, 135, 90, 67½ and 45 or 22½

Consumption: watts 12
Dimensions: 4½" x 8¼" x 8⅝"

Balkite Combination, Model "KX", "B" Current Supply and Trickle Charger.

135 volts	"B" Output	30 milliamperes
-----------	------------	-----------------

"B" Voltages, 135, 90, 67½ and 45 or 22½

"A" Charging Rate, 0.5 ampere

Consumption: watts 17
Dimensions: 13¼" x 4½" x 8⅝"

Balkite "B", Model D, "B" Current Supply.

90 volts	Output	20 milliamperes
----------	--------	-----------------

Voltages, 90, 45 or 22½

Consumption: watts 7
Dimensions: 3⅝" x 7⅝" x 8¼"

Balkite BII, "B" Current Supply.

90 volts	Output	40 milliamperes
----------	--------	-----------------

Voltages, 90, 45, 22½

Consumption: watts 10

Balkite Model H Charger, High Rate Charger.

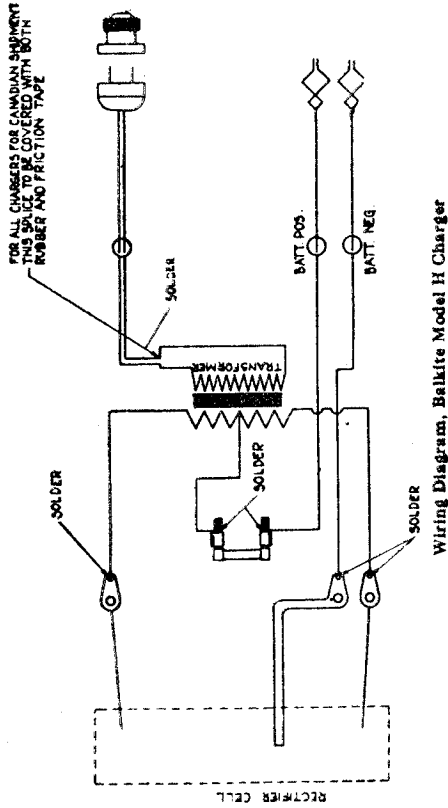
Charging Rate, 2½ amperes
Consumption: watts 60

Balkite Model A Charger, High Rate Charger.

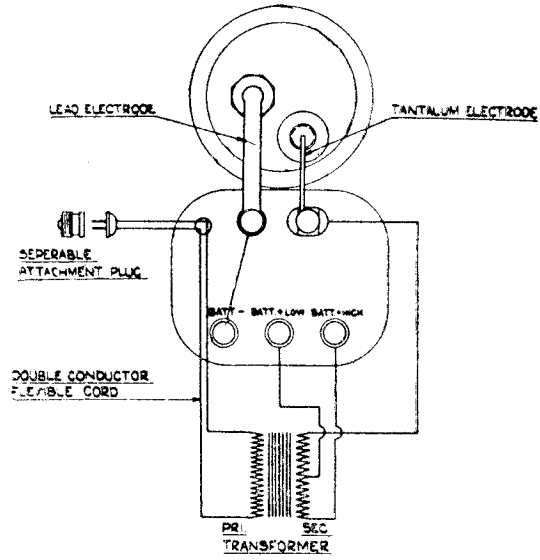
Charging Rate, 3 amperes
Consumption: watts 80

MODEL H - J Chargers
 MODEL K - N Chargers

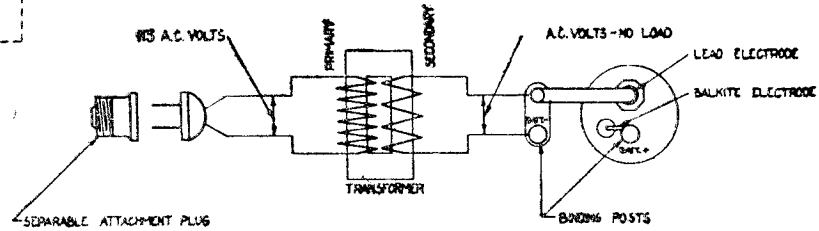
BALKITE PRODUCTS CO.



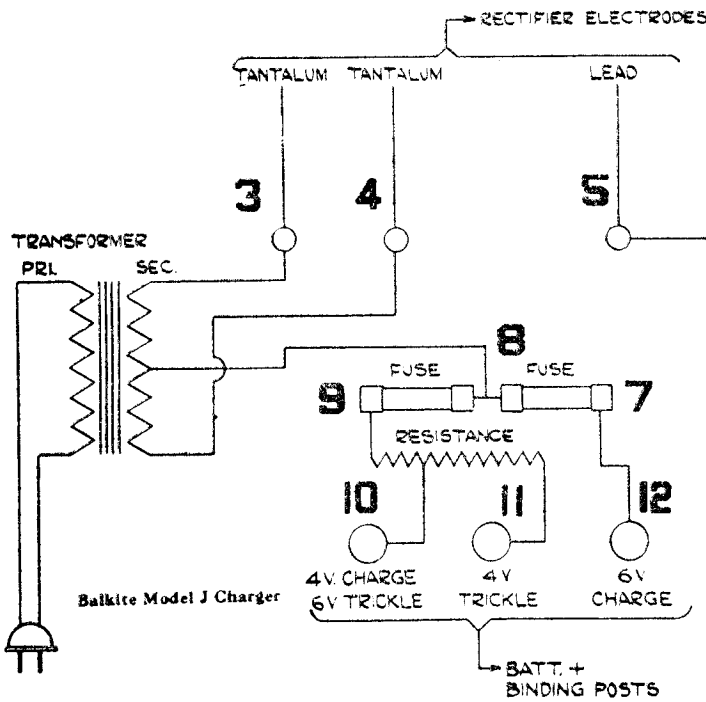
Wiring Diagram, Balkite Model H Charger



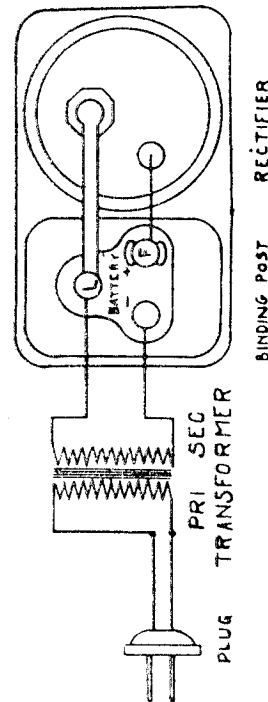
Wiring Diagram, Balkite Model N Charger



Wiring Diagram, Balkite Model K, Trickle Charger



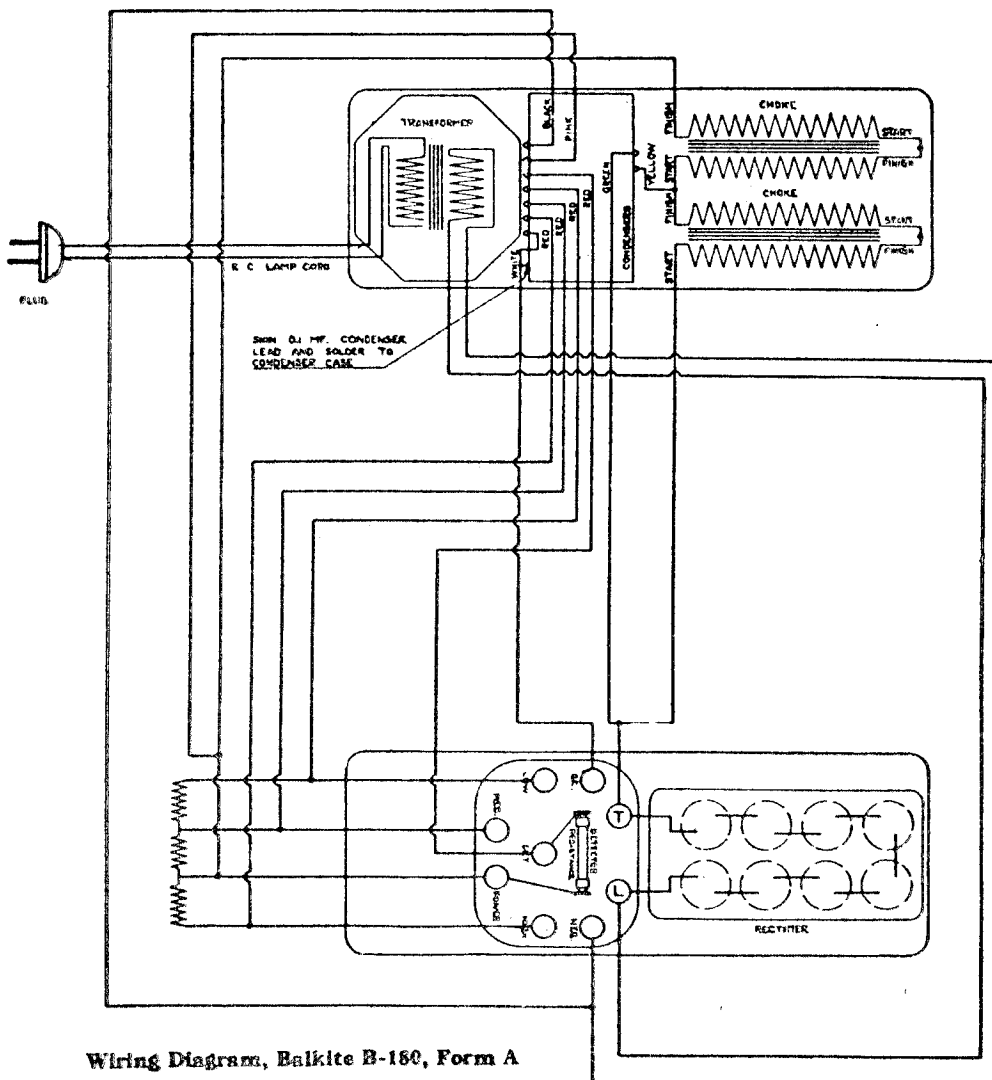
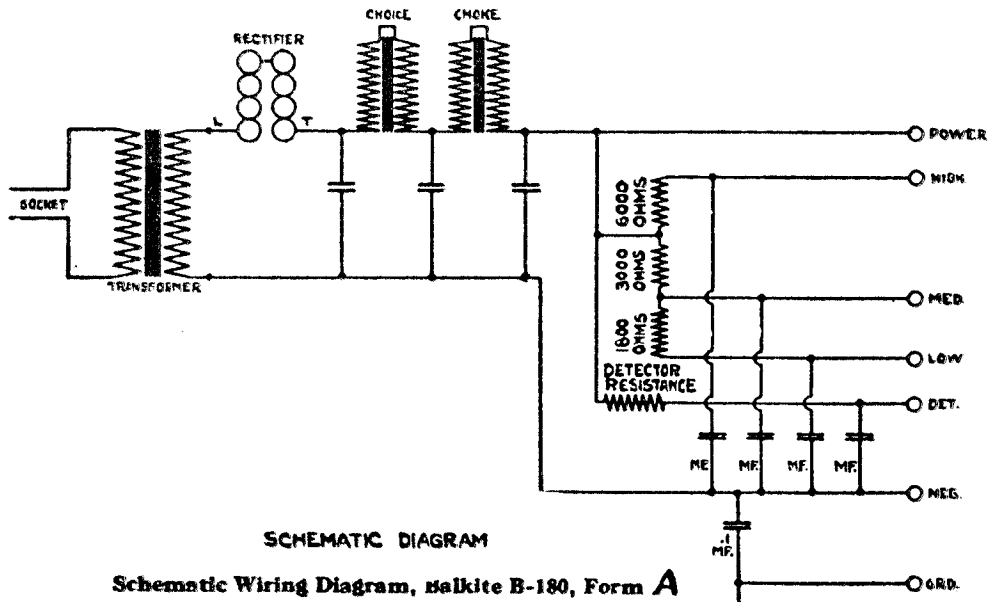
Wiring Diagram, Balkite Model J Charger



Wiring Diagram, Balkite Model K, Trickle Charger

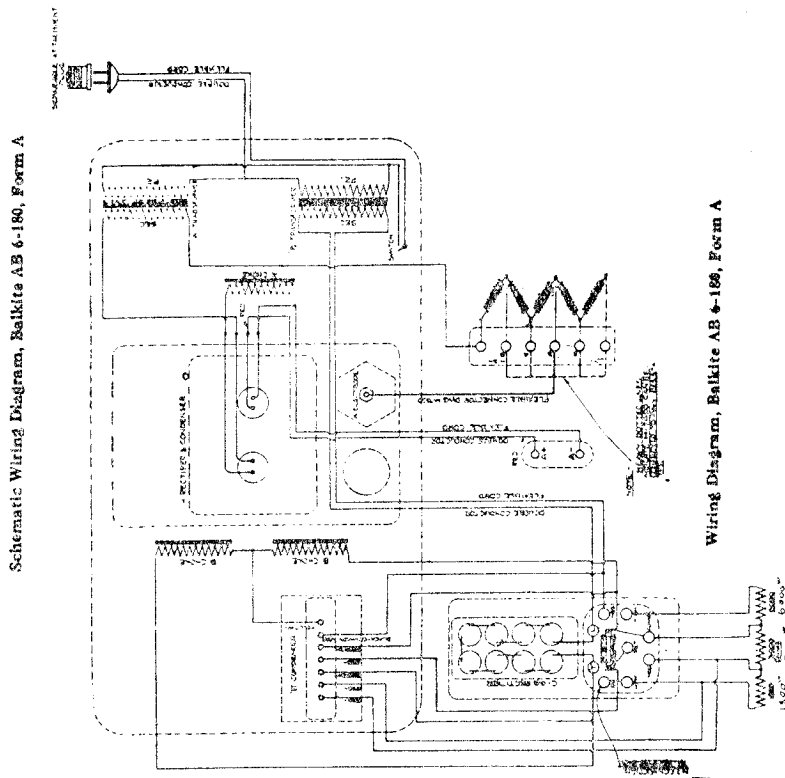
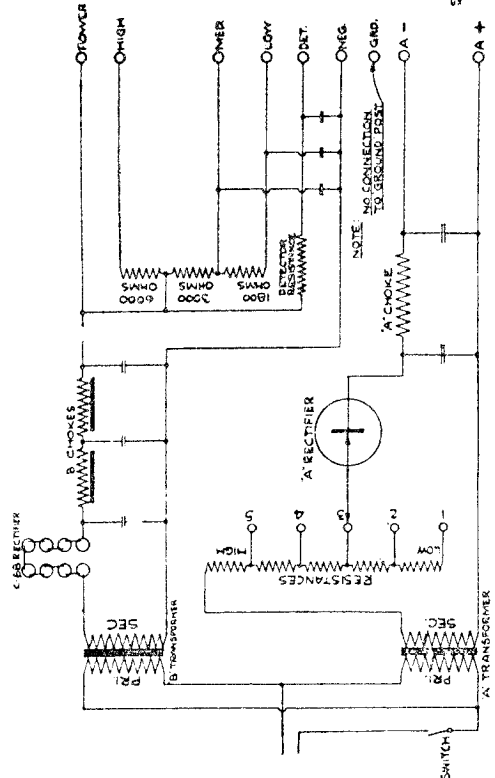
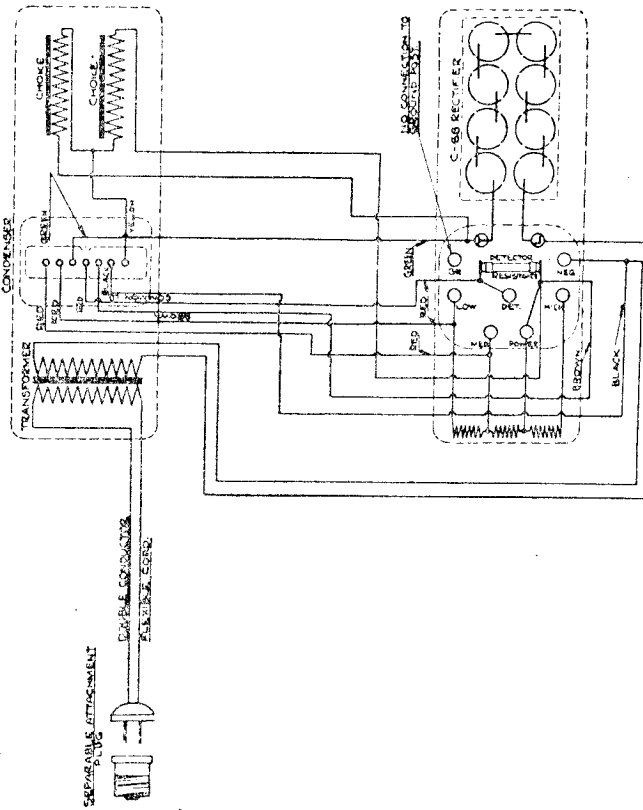
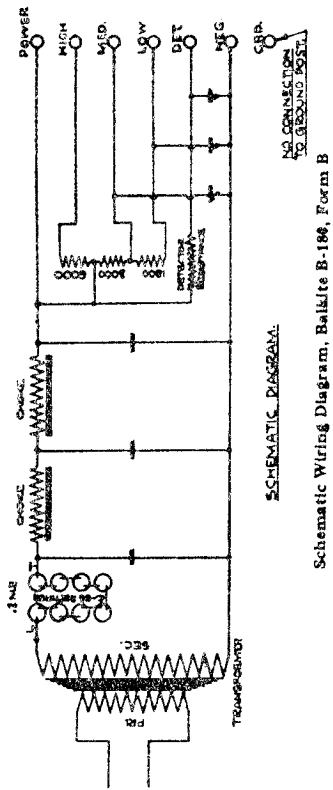
MODEL B-180 Form A

BALKITE PRODUCTS CO.



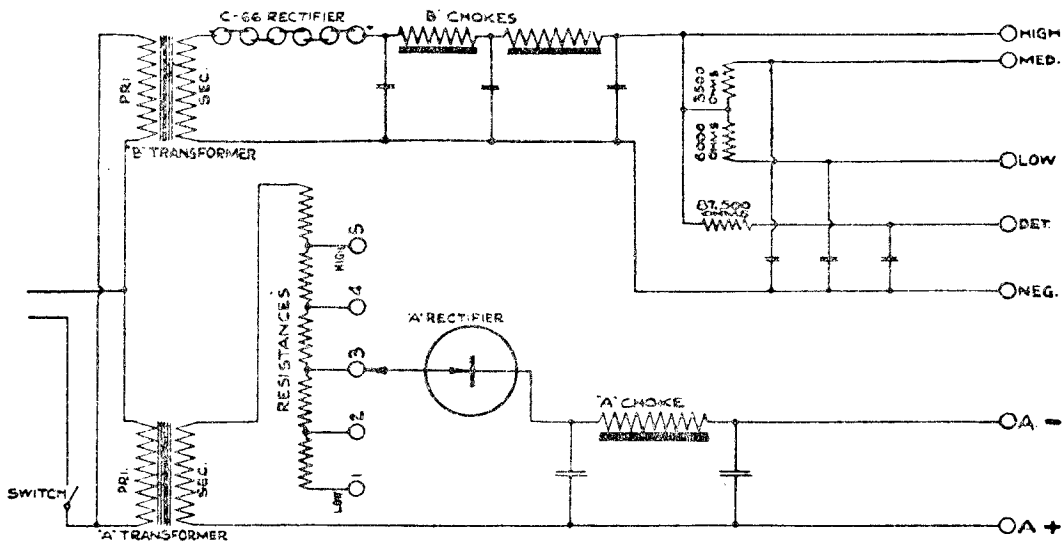
MODEL AB-6-180 Form A
 MODEL B-180 Form B

BALKITE PRODUCTS CO.

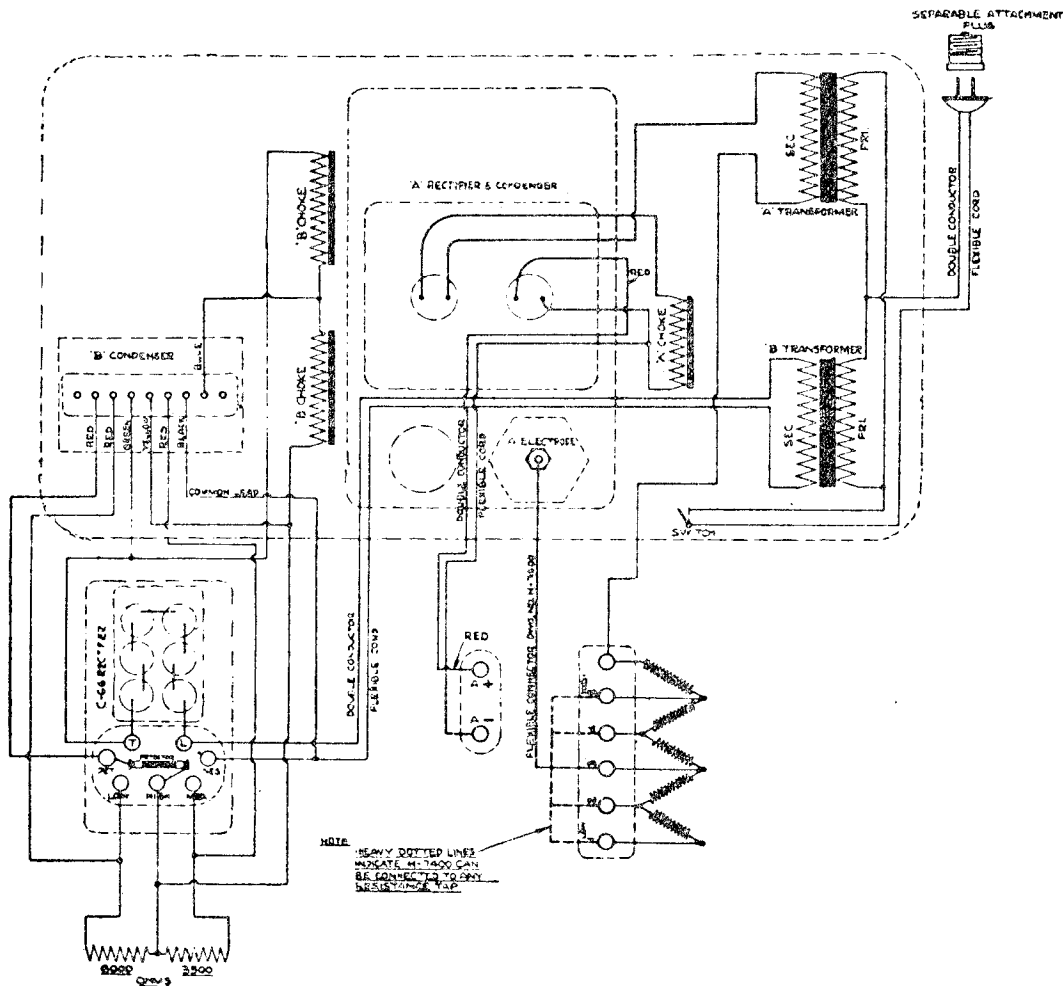


BALKITE PRODUCTS CO.

MODEL AB-6-135 Form A



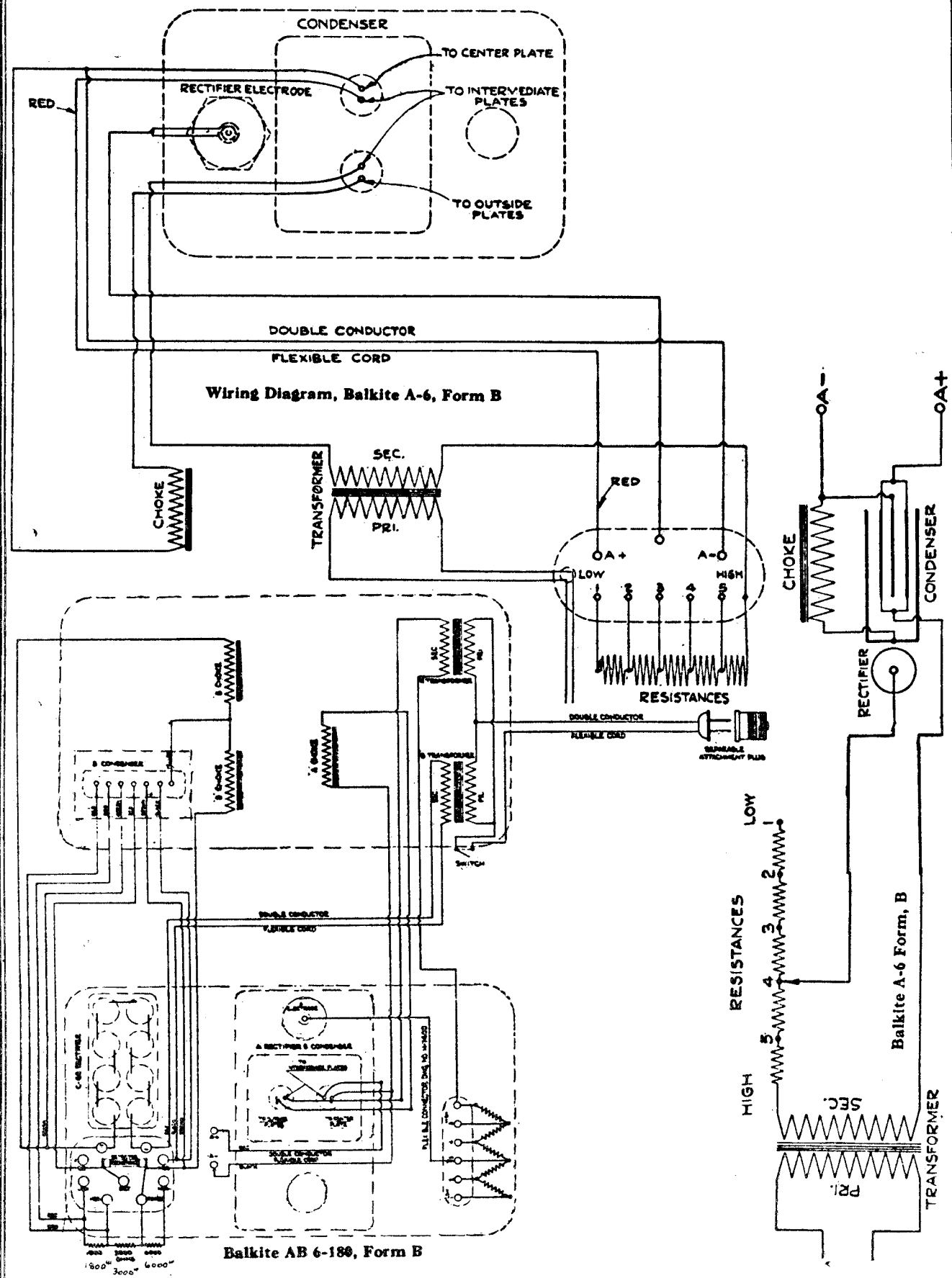
Schematic Wiring Diagram, Balkite AB 6-135, Form A



Wiring Diagram, Balkite AB 6-135, Form A

MODEL AB-6 Form B

BALKITE PRODUCTS CO.



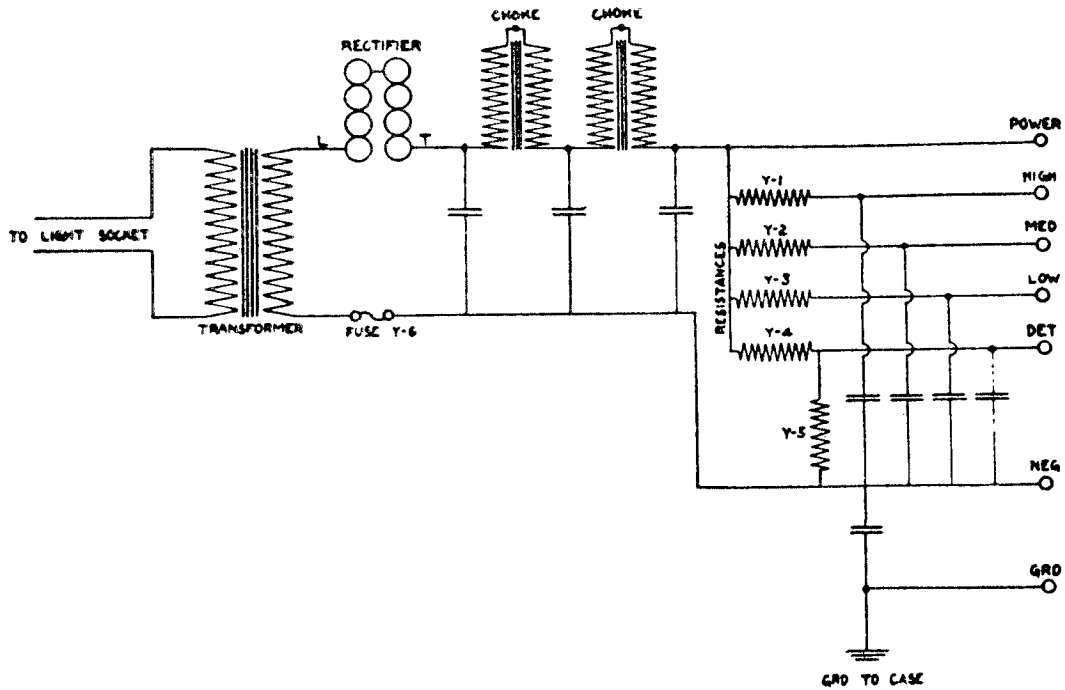
Wiring Diagram, Balkite A-6, Form B

Balkite AB 6-180, Form B

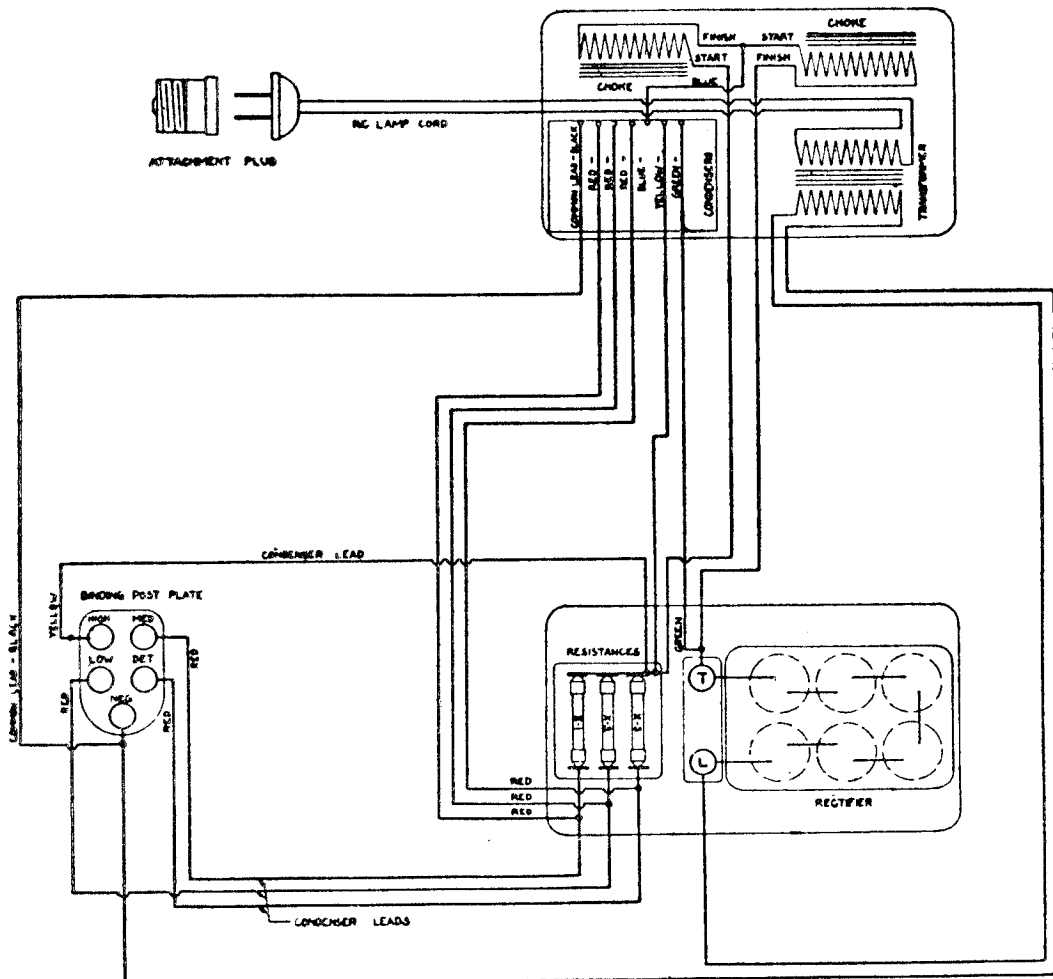
1500 3000 6000
500 1000 2000

MODEL BY

BALKITE PRODUCTS CO.



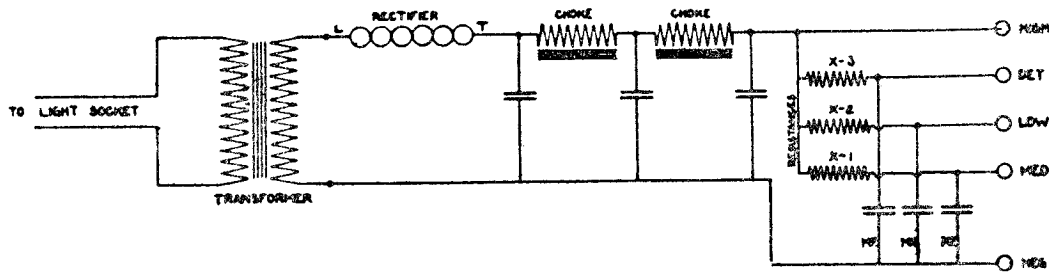
Schematic Wiring Diagram, Balkite BY



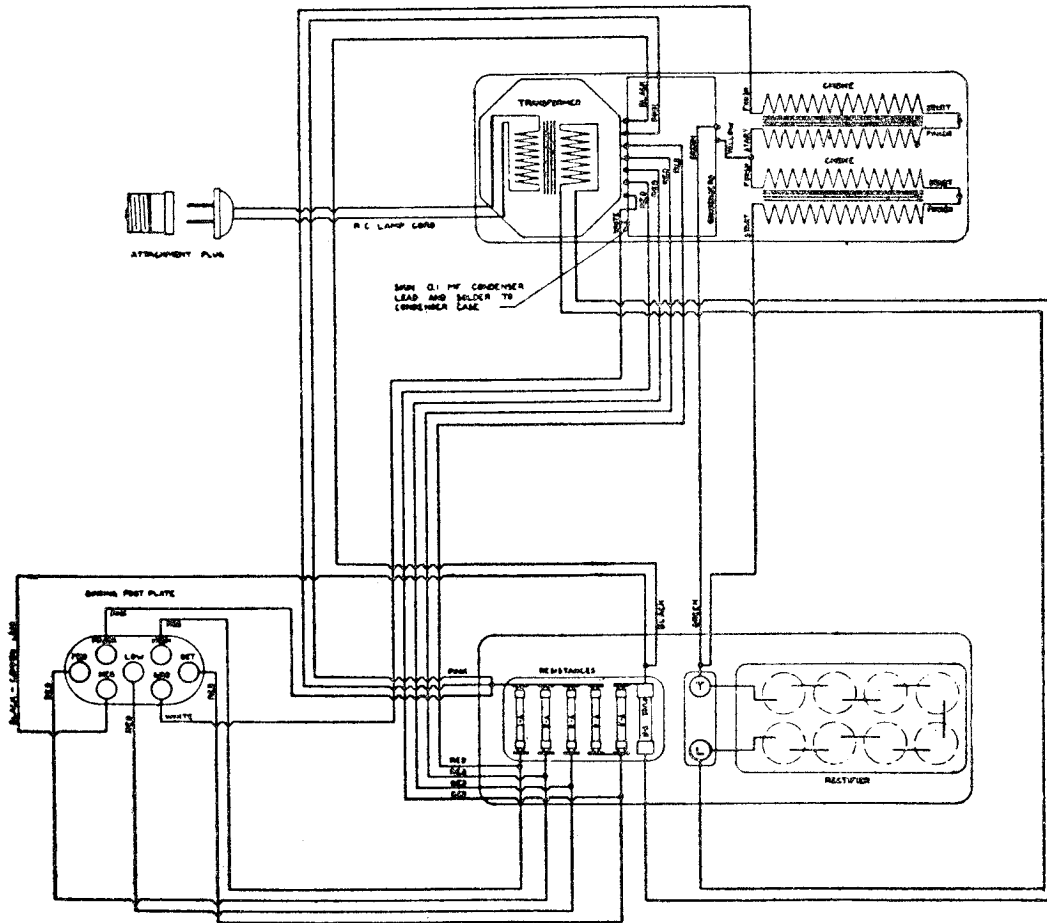
Wiring Diagram, Balkite BY

MODEL A-6
MODEL B-X

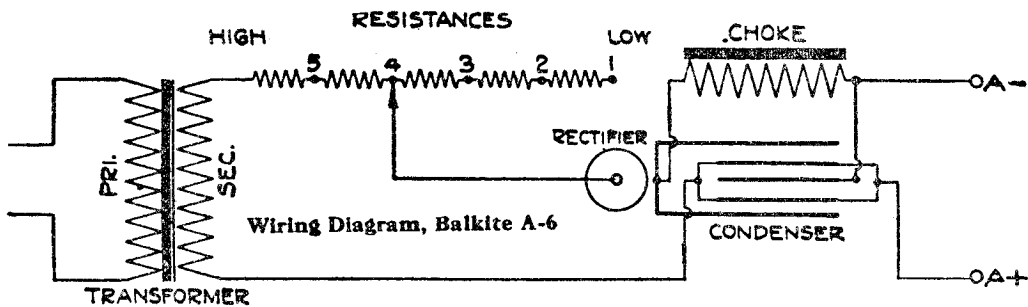
BALKITE PRODUCTS CO.



Schematic Wiring Diagram, Balkite BX



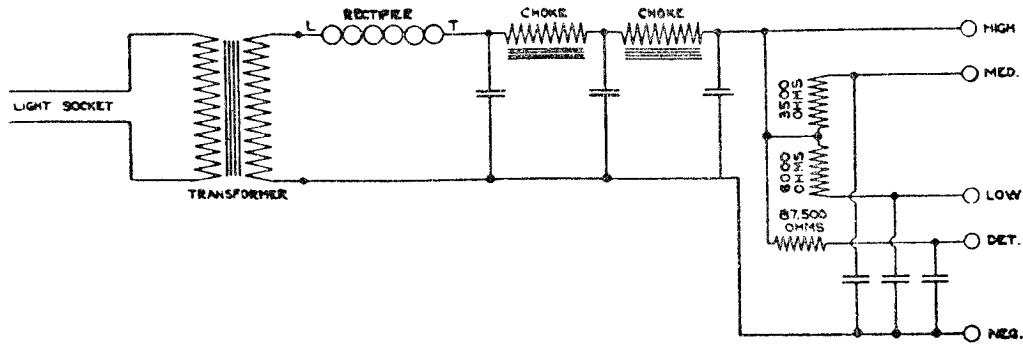
Wiring Diagram, Balkite BX



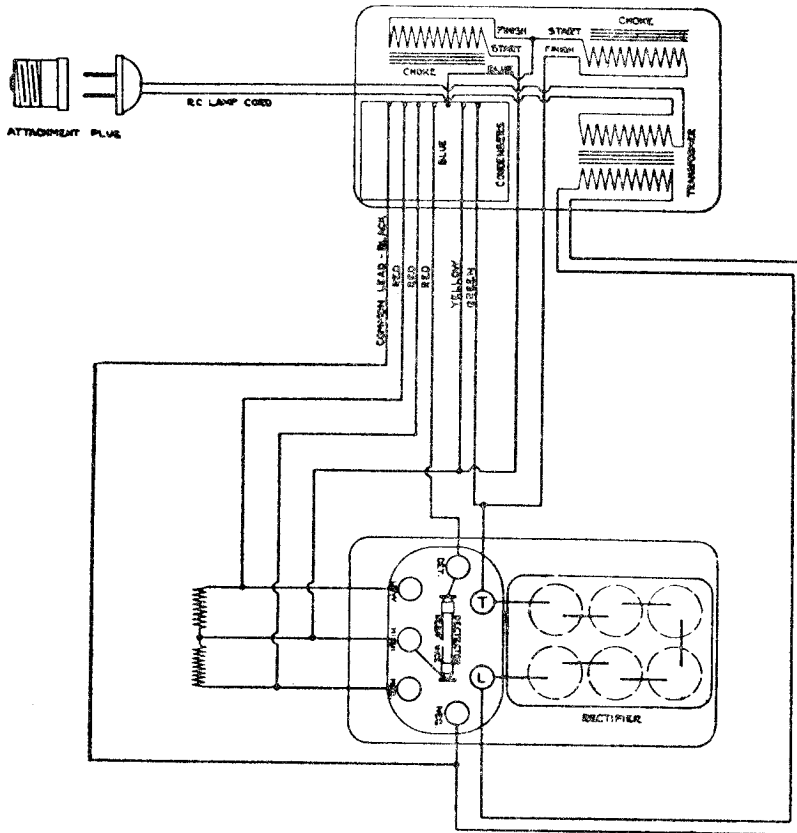
Wiring Diagram, Balkite A-6

BALKITE PRODUCTS CO.

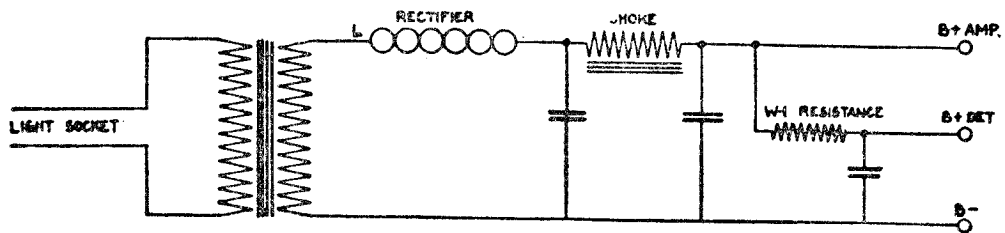
MODEL B-135 Form A
MODEL B-W



Schematic Wiring Diagram, Balkite B-135



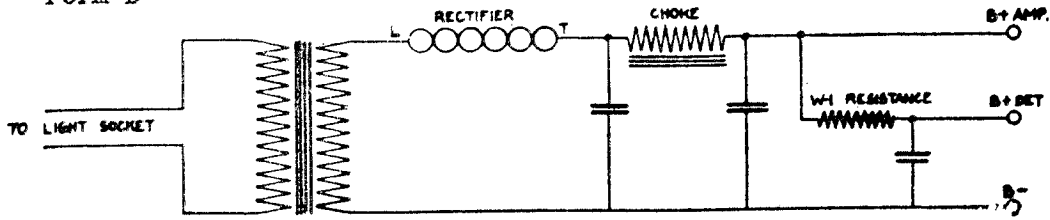
Wiring Diagram, Balkite B-135, Form A



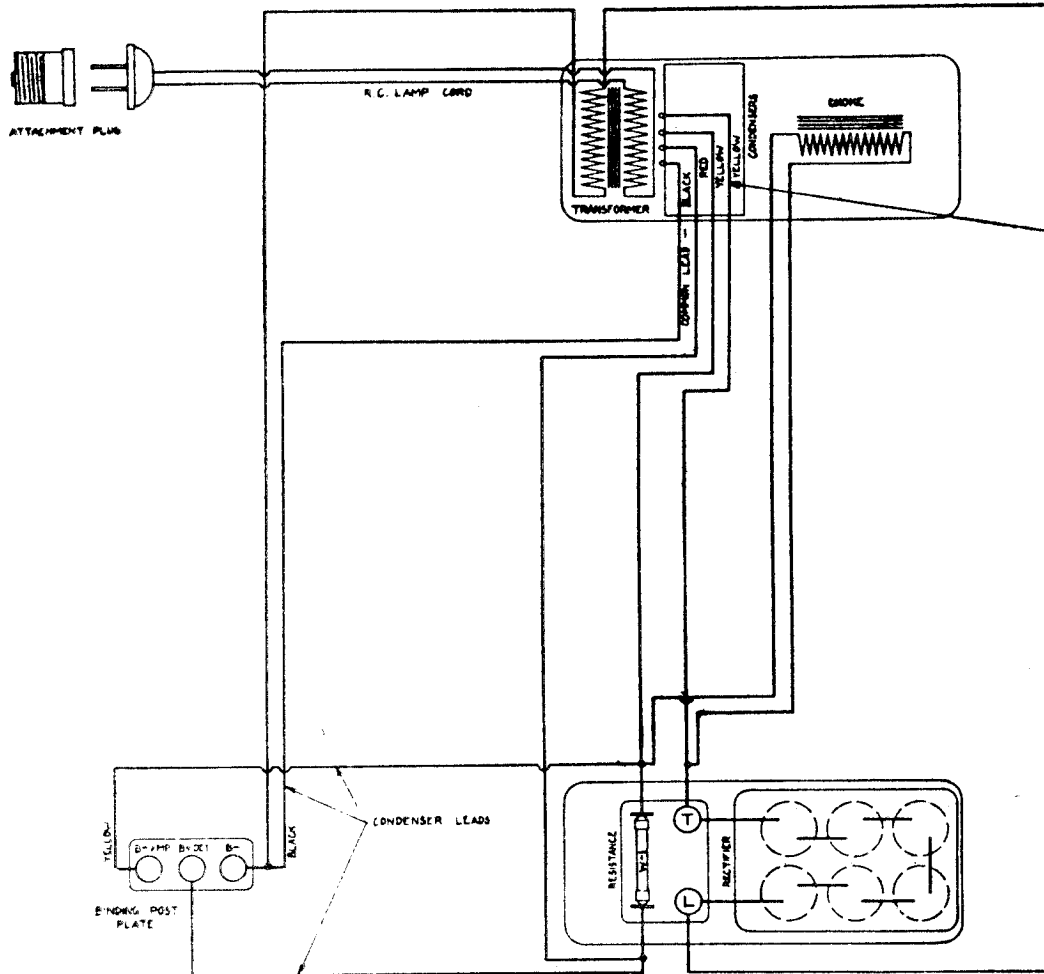
Wiring Diagram, Balkite BW

MODEL B-H
 MODEL B-W Form D
 MODEL B Form D

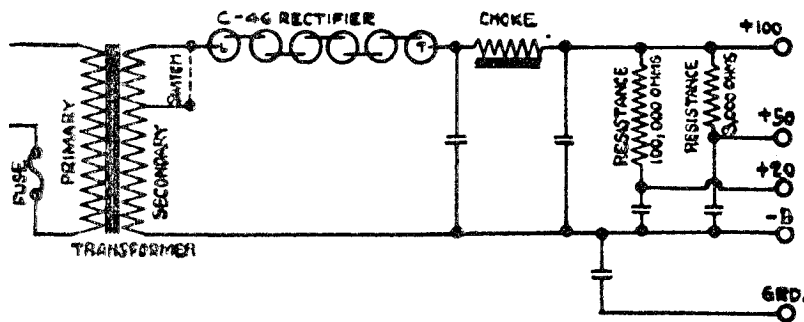
BALKITE PRODUCTS CO.



Schematic Wiring Diagram, Balkite BW or Balkite B, Model D



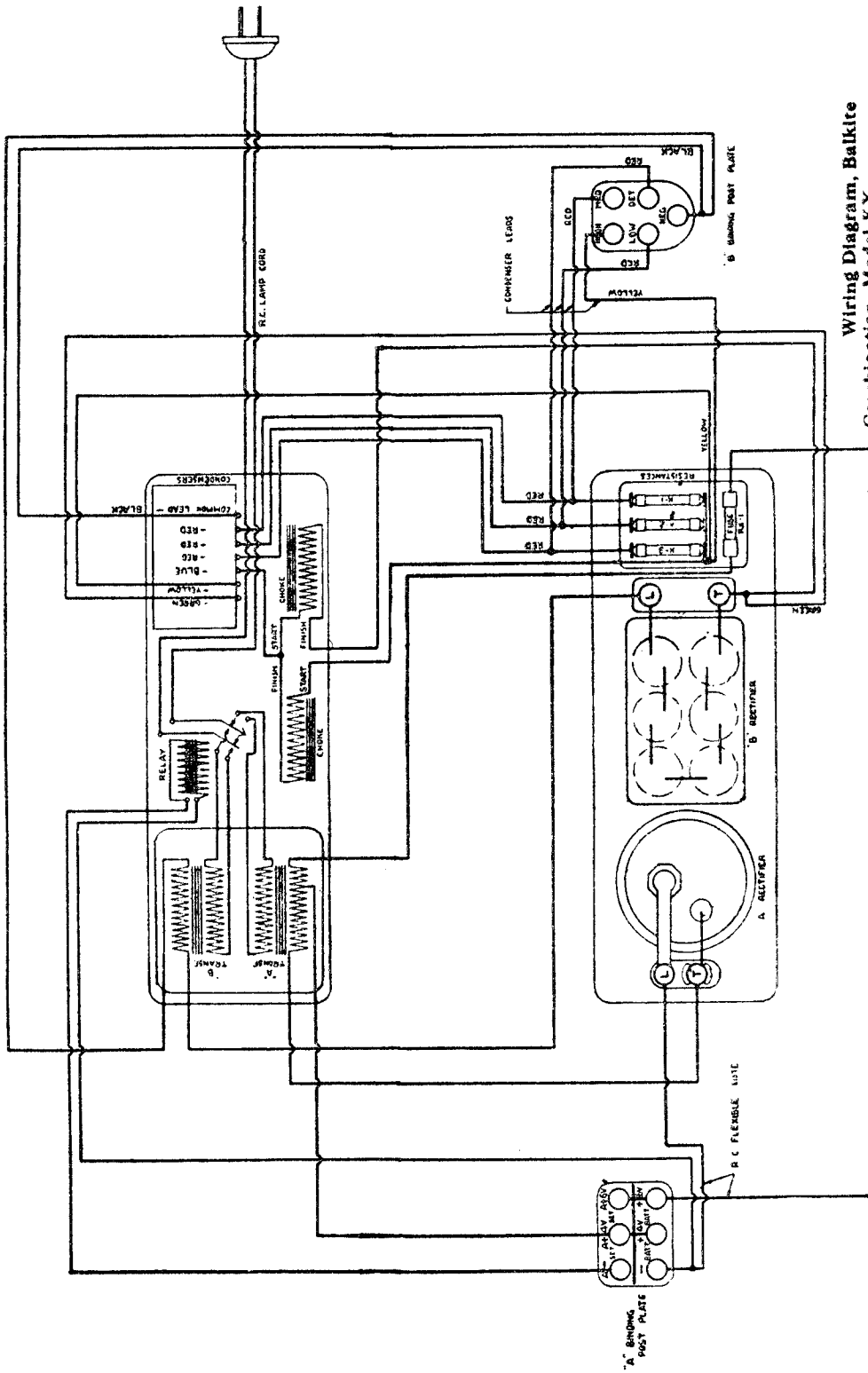
Wiring Diagram, Balkite BW or Balkite B, Model D



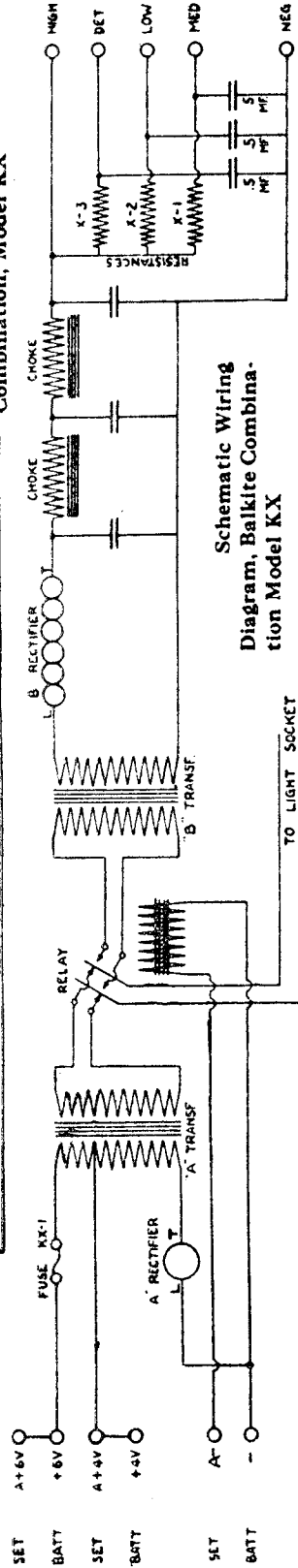
Wiring Diagram, Balkite B-H

BALKITE PRODUCTS CO.

MODEL K-X



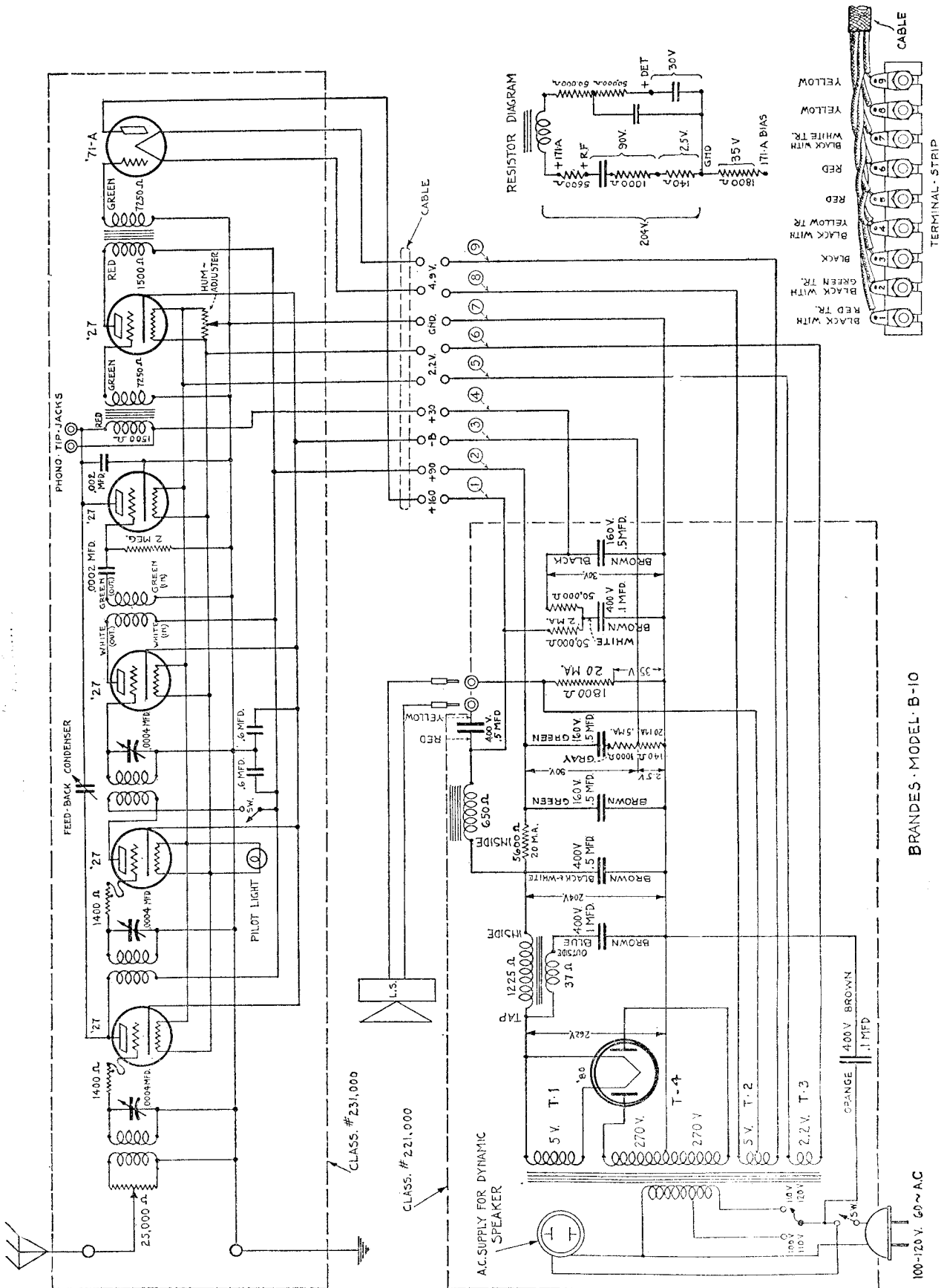
Wiring Diagram, Balkite Combination, Model KX



Schematic Wiring Diagram, Balkite Combination Model KX

BRANDES PRODUCTS CORP.

MODEL B-10



BRANDES MODEL B-10

BRANDES PRODUCTS CORP.

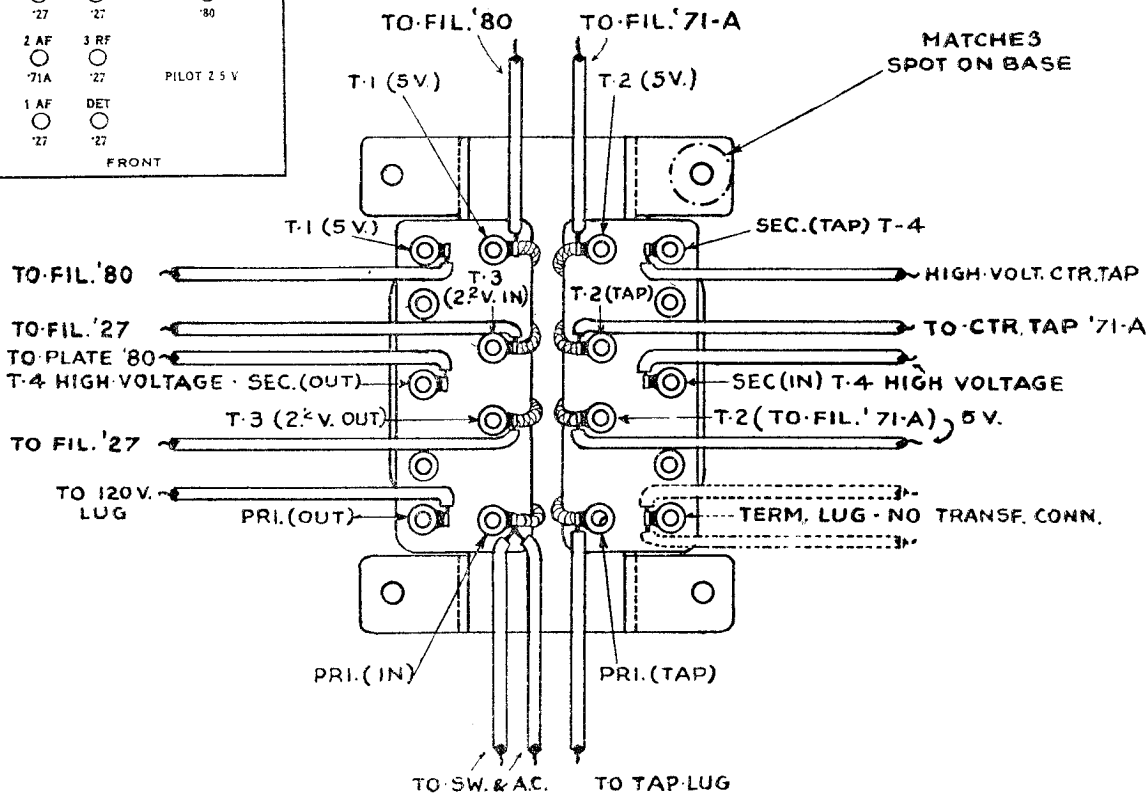
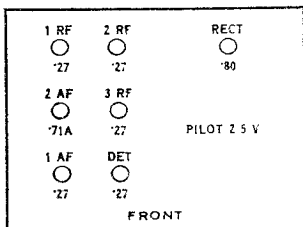
MODEL B-10
Voltage

Input Voltage 115			Switch 110-120 Side				
Tube No.	Type Tube	Position of Tube	A Volts	B Volts	C Volts	Normal Plate MA	Plate MA Grid Test
1	'27	1st R.F.	2	88	3	4.3	8.
2	'27	2nd R.F.	2	88	3	4.3	8.
3	'27	3rd R.F.	2	88	3	6.	9.2
4	'27	Detector	2	36	3	3.	3.1
5	'27	1st Audio	2	88	3	5.3	8.2
6	'71A	2nd Audio	5	164	35	20.	30
7	'80	Rectifier	5				

The above readings are the average and may vary due to differences in line voltage, variation in tube characteristics, etc.

The readings are given merely as a guide to work from.

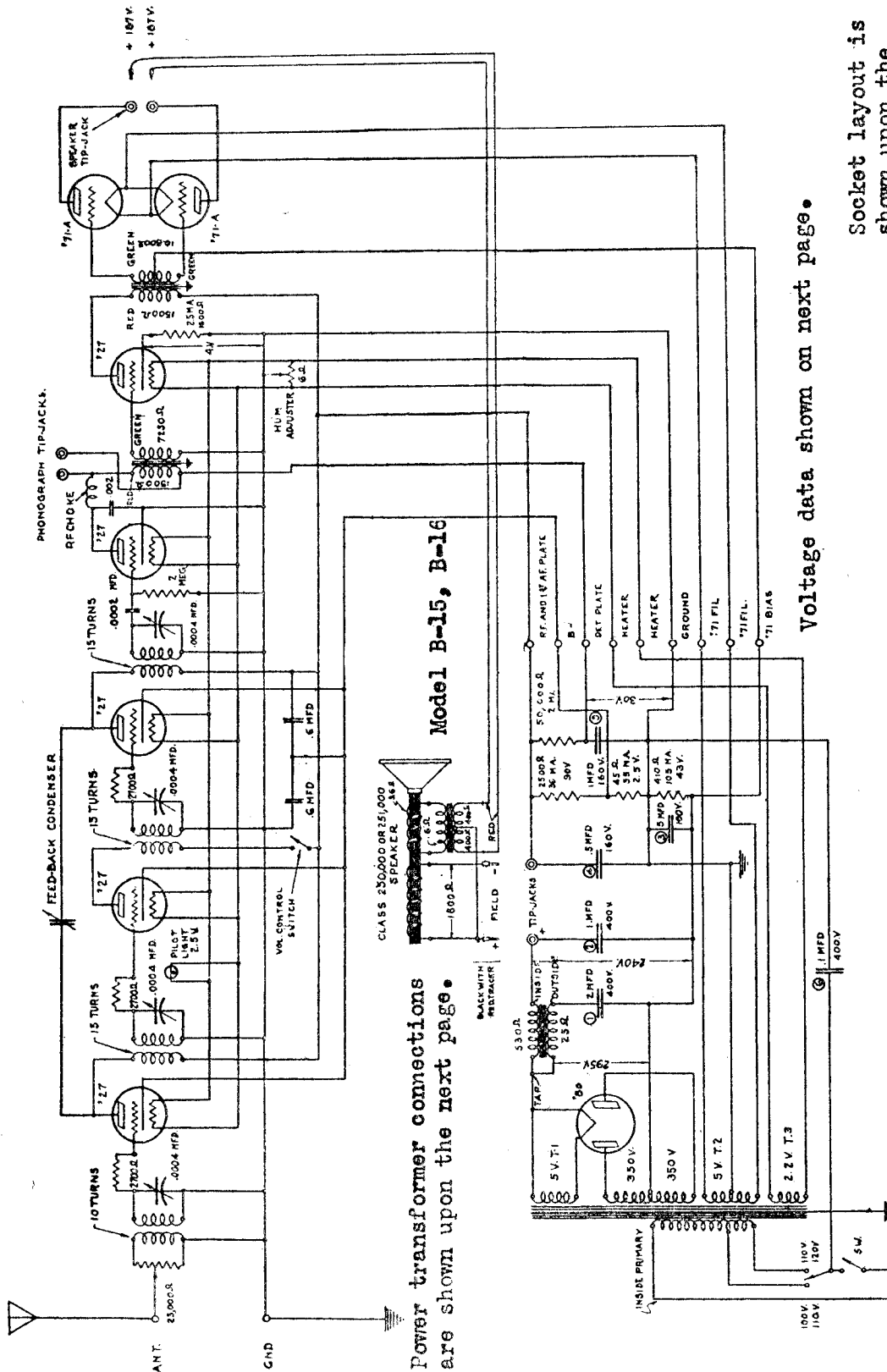
Models B10, B11, B12



POWER TRANSFORMER ASSEMBLY

MODEL B-15, B-16

BRANDES PRODUCTS CORP.



Power transformer connections are shown upon the next page.

Model B-15, B-16

Voltage data shown on next page.

Socket layout is shown upon the reverse side of this sheet.

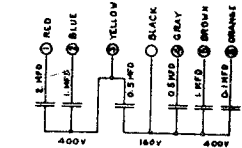
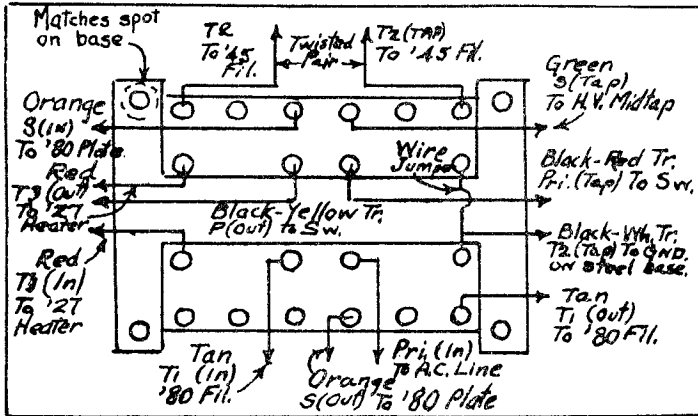
The early production of this receiver made use of type '71 tubes in the output stage. The use of type '45 tubes stated during the later production. In order to enable the use of these 2.5 volt tubes, series resistors were employed in the '71 filament circuit. A resistor was inserted into each filament lead. The "B" and grid bias voltages remained the same for '71s and '45s.

100V 110V 120V

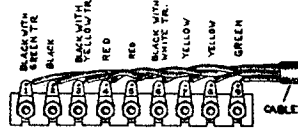
60/120V 60V AC.

BRANDES PRODUCTS CORP.

MODEL B-15, B-16
Voltage and Data



Condenser Block



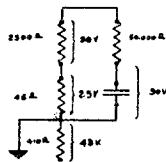
Terminal Strip

POWER TRANSFORMER CONNECTIONS FOR LATE MODELS

BRANDES—Models 15 and 16
Line Voltage 112—Volume Control Position Max
*Grid leak not shorted.

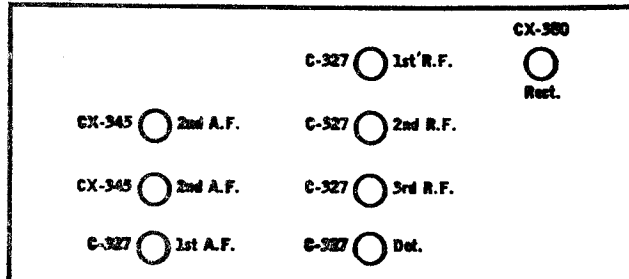
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT			TUBE IN TESTER						
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONTR. CHD.)	CATHODE HEATER VOLTS	NORMAL PLATE M.A.	PLATE TEST M.A.	PLATE CHANGE M.A.	SCREEN GRID VOLTS
1	227	1st RF	2.3	94	2.2	90	2.5	—	5.6	10.0	4.4	—
2	227	2nd RF	2.3	94	2.2	90	2.5	—	5.6	10.0	4.4	—
3	227	2nd RF	2.3	94	2.2	90	2.5	—	5.6	10.0	4.4	—
4	227	Det.	2.3	80	2.2	24	0	—	1.3	1.3	—	—
5	227	1st A	2.3	95	2.2	85	5	—	3	4.2	1.2	—
6	245	2nd A	2.4	210	2.3	190	36	—	18	21	3	—
7	245	2nd A	2.4	210	2.3	190	36	—	18	21	3	—
8	280	—	5	—	4.8	—	—	—	100	—	—	—
9												
10												

The above voltage table shows '45 type tubes in the output stage. When '71s are used, the filament voltage without the tubes in the sockets is 4.5 and the plate voltage under similar conditions is 200. With the tubes in the sockets the filament voltage is about 4.5, the plate voltage about 187, grid bias, 36 volts and plate current about 20 ma.



Resistor Diagram

B-15, B-16

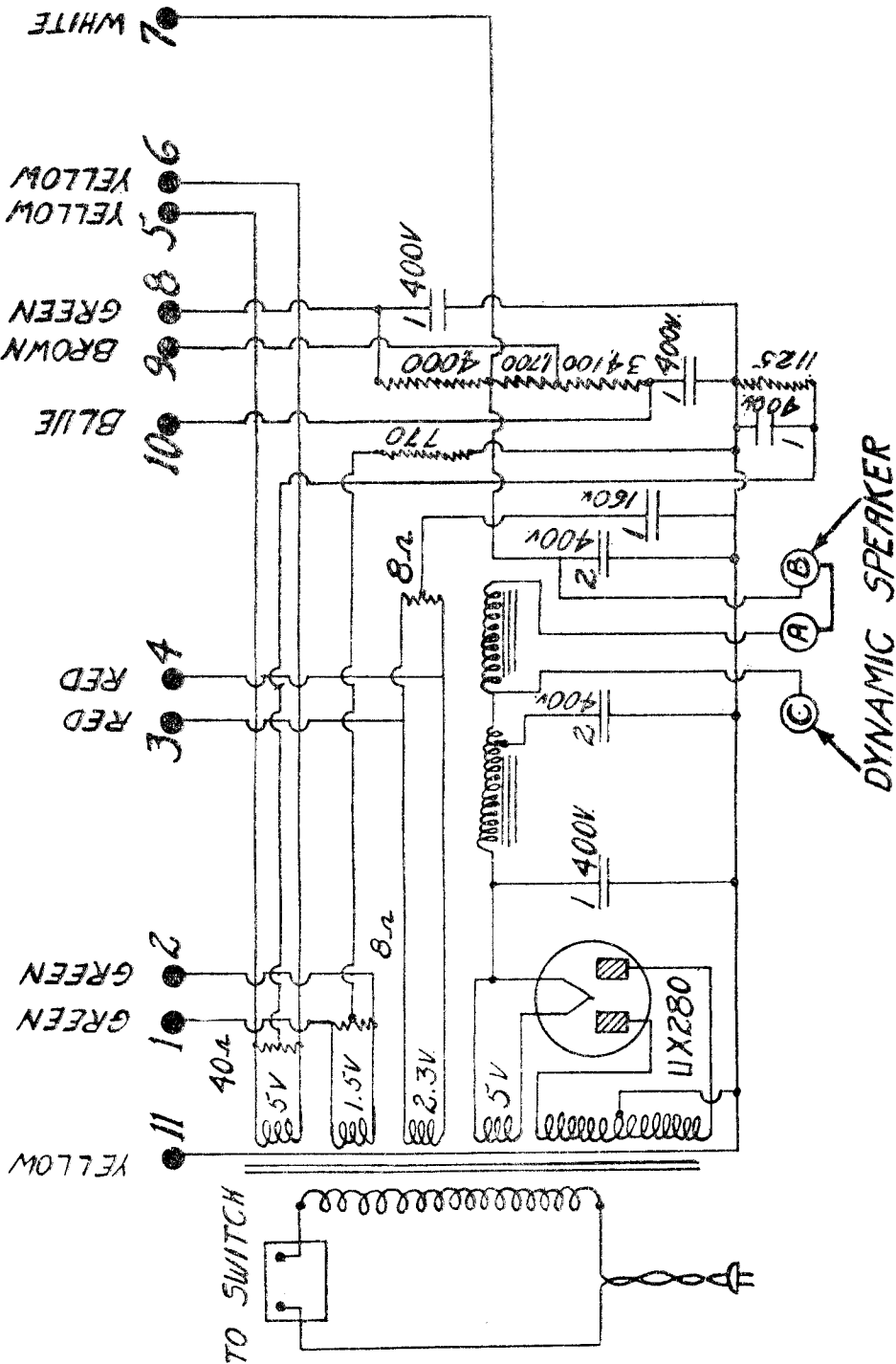


MODEL 7-70

Power Converter

BREMER-TULLY MFG. CO

B-T 7-70 POWER CONVERTER

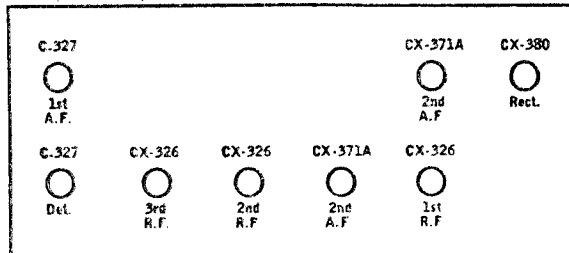


BREMER-TULLY—Models 7-70 and 7-71
Line Voltage 115

7-70, 7-71M, 7-71P

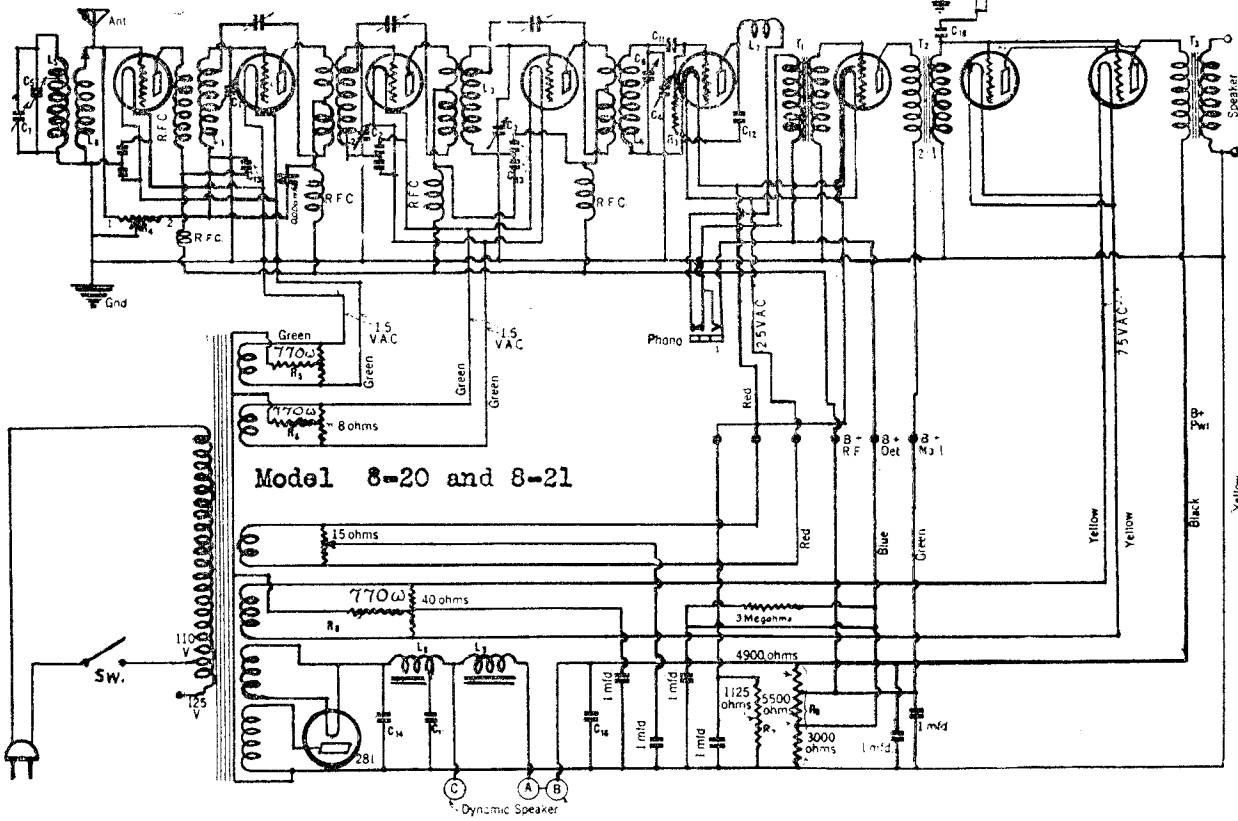
(A.C.)

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1st AT LEFT ETC)	TUBE DATA					RECIPIER PLUG IN SOCKET OF SET			TUBE IN TESTER		
			A VOLTS	B VOLTS	C VOLTS	W VOLTS	X VOLTS	CATHODE VOLTS	NORMAL PLATE MA	PLATE MA GRID TEST	PLATE MA CHARGE	W	X	Y
1	225	1st. R.F.		1.4	150	9		5	12	7			
2	171A	Push-Pull		4.9	150	30		18	31	13			
3	226	2nd. R.F.		1.4	150	9		5	12	7			
4	226	3rd. R.F.		1.4	150	9		5	12	7			
5	227	Detector		2.1	60	0		2					
6	227	1st. A.F.		4.1	150	8		9	6	3			
7	171A	Push-Pull		4.9	150	30		18	31	13			



BREMER-TULLY MFG. CO

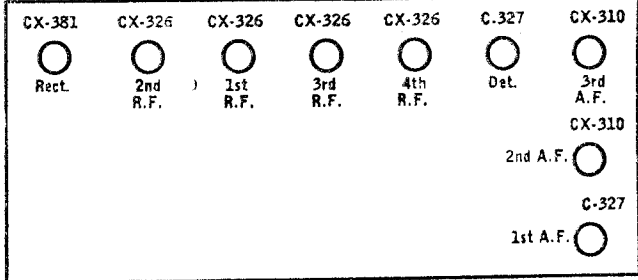
MODEL 8-20, 8-21
MODEL 8
Counterphase



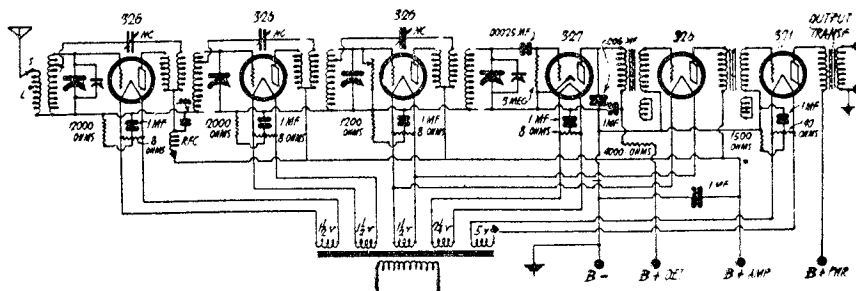
Model 8-20 and 8-21

8-20, 8-21, 8-22

(A.C.) BREMER-TULLY—Models 8-20 and 8-21
Line Voltage 115



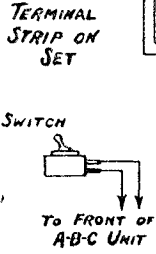
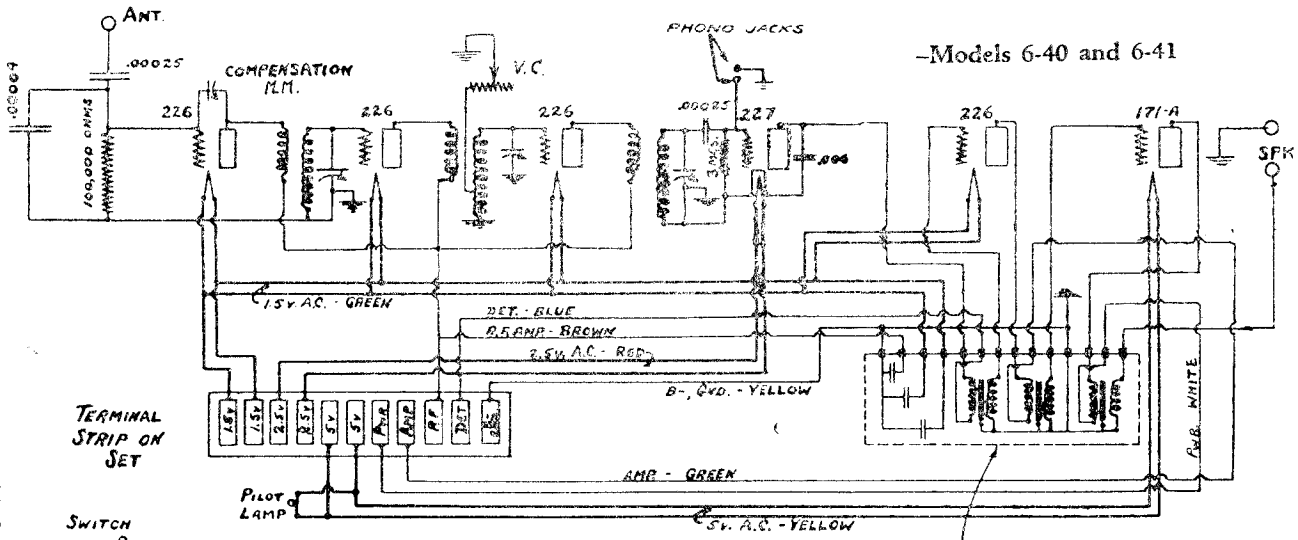
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION ON TUBE SET R.F. DET. E.T.C.	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE
1	226	1st. R.F.	1.4	150	10			5	10	5	
2	226	Ant.	1.4	150	10			5	10	5	
3	226	2nd. R.F.	1.4	150	10			5	10	5	
4	226	3rd. R.F.	1.4	150	10			5	10	5	
5	227	Detector	2.2	60	0			2			
6	227	1st. A.F.	2.2	130	7			5	10	5	
7	310	2nd. A.F.	7.5	350	18			20	50	30	
8	310	2nd. A.F.	7.5	350	18			20	50	30	



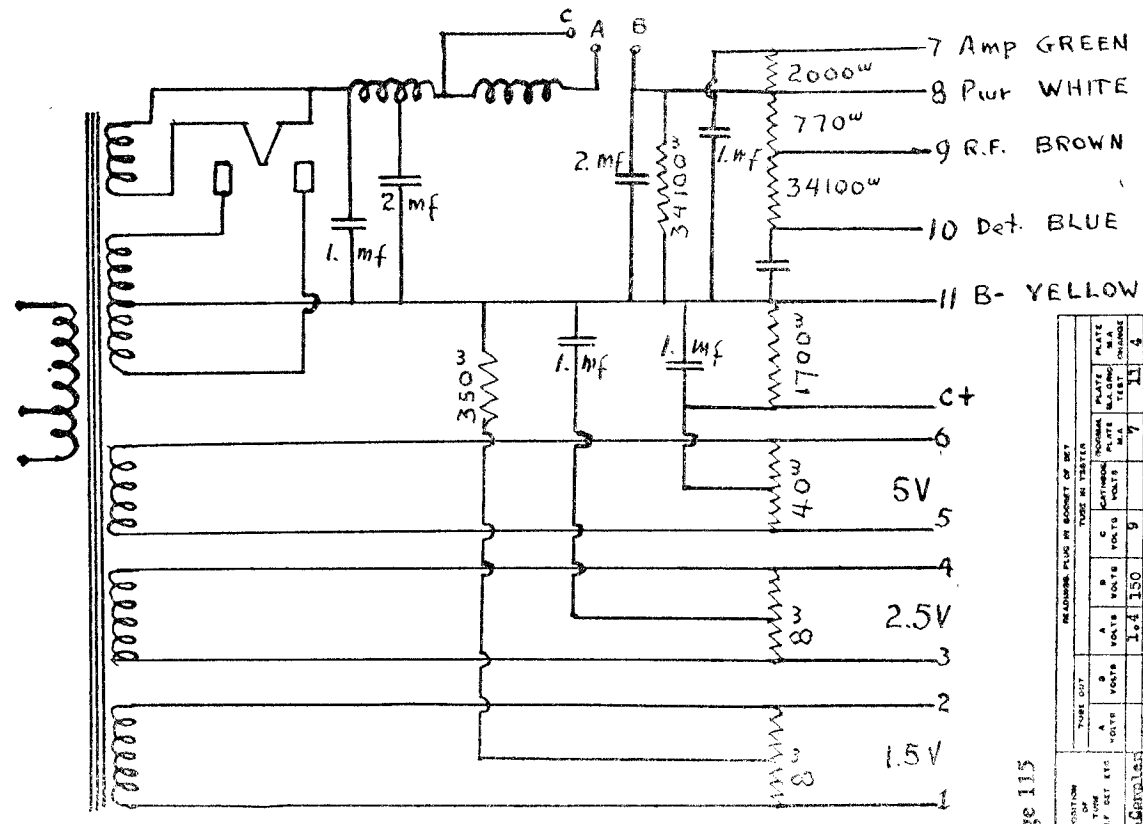
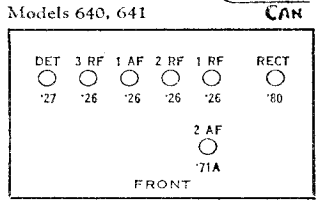
Model Counterphase #8

MODEL 6-40, 6-41

BREMER-TULLY MFG. CO



- YELLOW - B- AND GROUND - 5 v. AC.
- BLUE - B. DET.
- GREEN - B. AMP - 1.5 v. AC.
- BROWN - B. RF - ANT.
- WHITE - B. PWR - SPK.
- RED - PLATE LEADS - 2.5 v. AC.
- BLACK - GRID LEADS



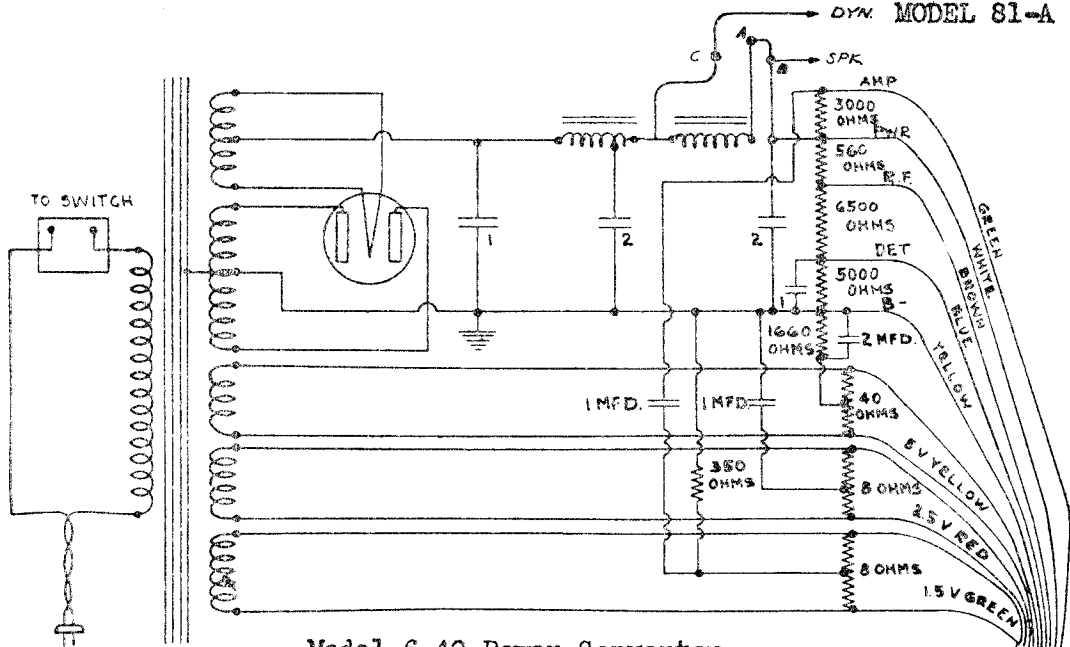
Model 6-40 ABC Power Pack

Line Voltage 115

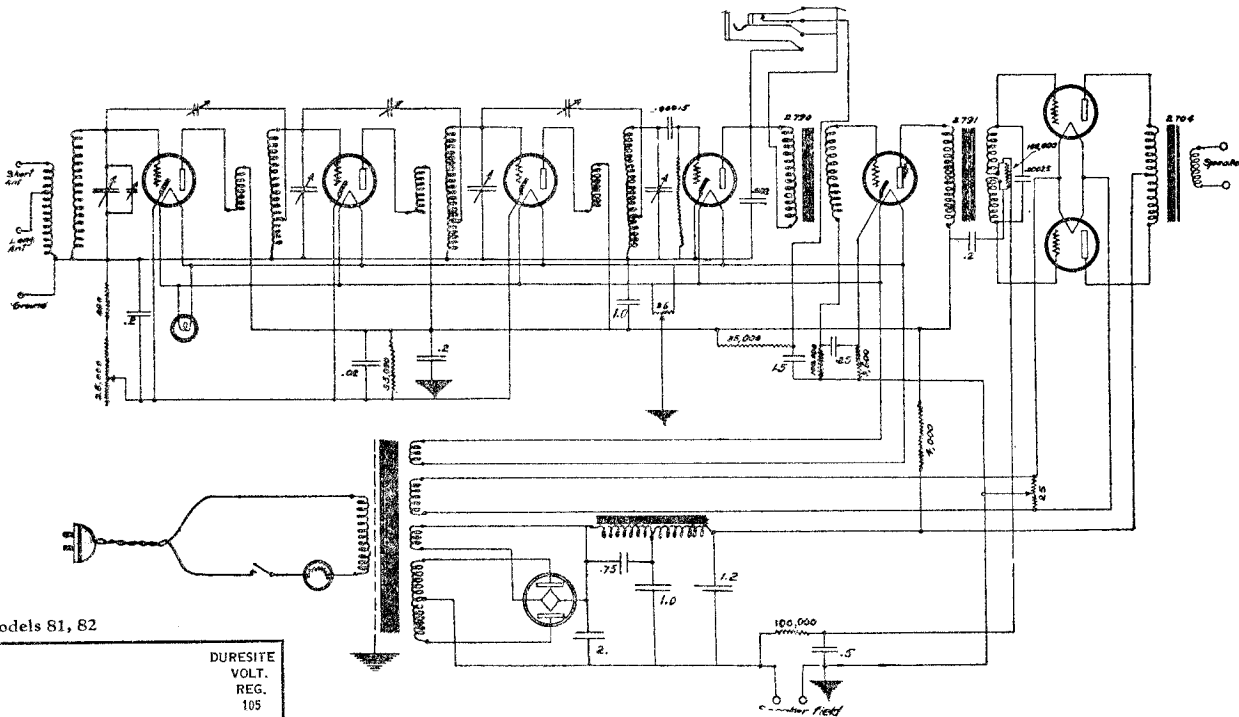
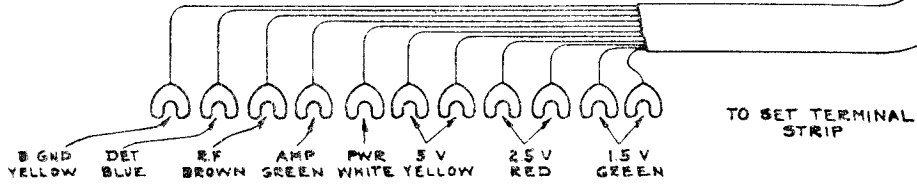
TUBE NO. AND TYPE	POSITION OF TUBE IN SET	MEASUREMENTS PLUG IN SOCKET OF SET				TUBE IN TESTER				PLATE VOLTAGE		
		A	B	C	D	A	B	C	D	PLATE	GRID	
1- 226	1st. A.F.	1.4	1.50	9	7	11	4	4	7	11	4	4
2- 226	1st. A.F.	1.4	1.50	9	8	11	4	4	6	11	4	4
3- 226	2nd. A.F.	1.4	1.50	9	7	6	11	4	6	11	4	4
4- 227	Rectifier	2.2	60	0	6	11	4	4	6	11	4	4
5- 171A	PWR	4.4	110	0	3	1	10	26	3	10	26	6

BREMER-TULLY MFG. CO

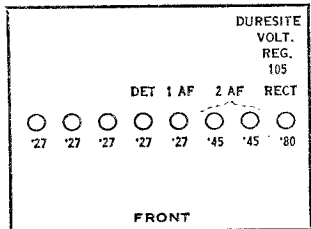
MODEL 6-40
Converter
MODEL 81-A



Model 6-40 Power Converter



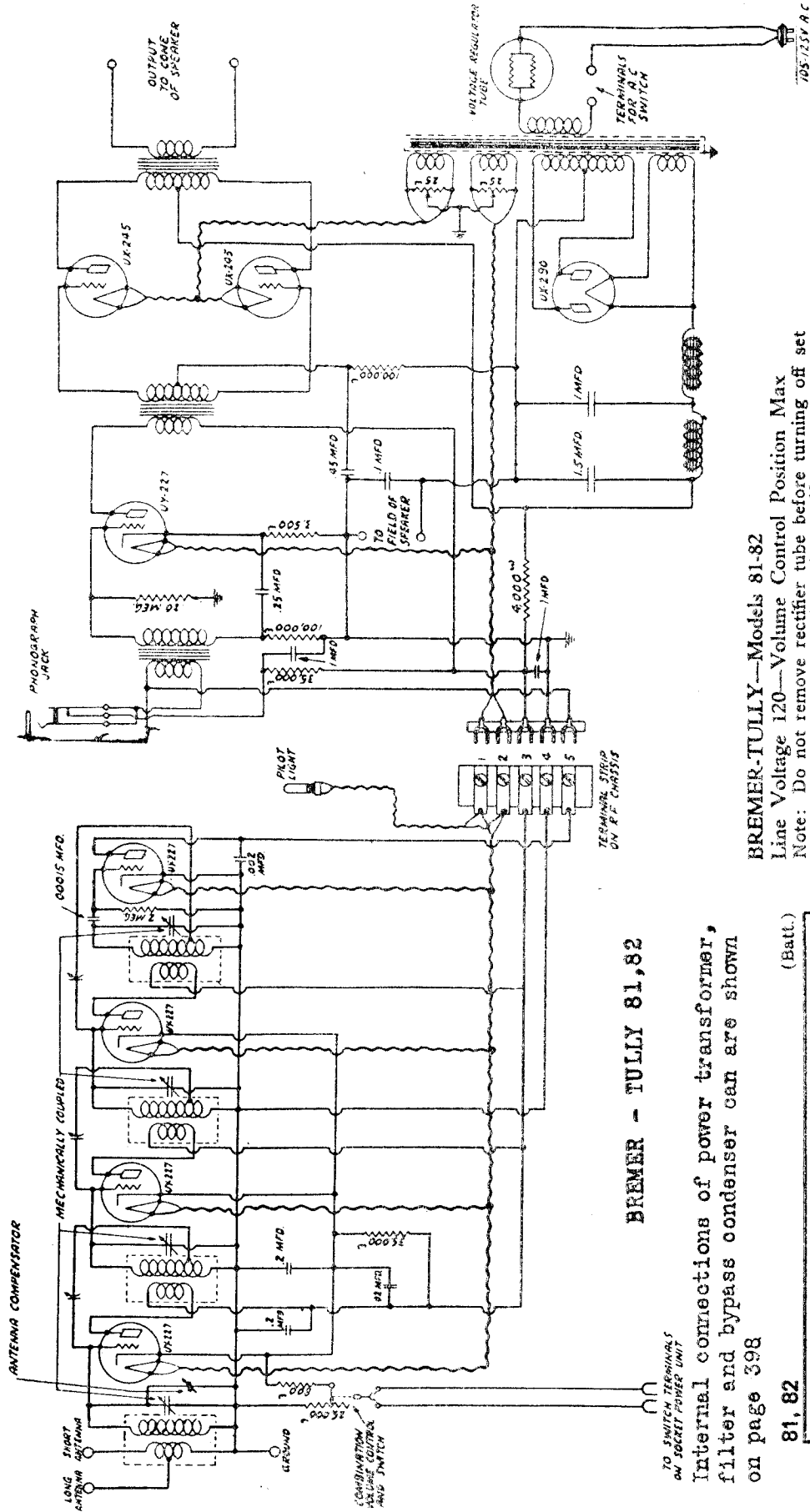
Models 81, 82



Model 81-A

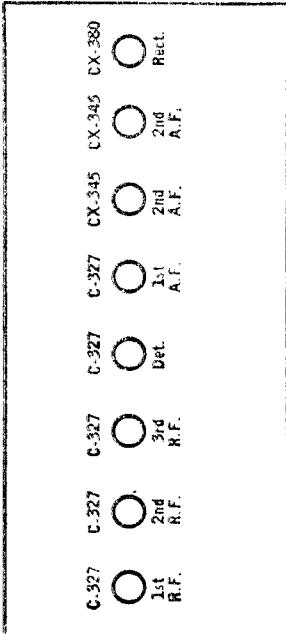
MODEL 81, 82

BREMER-TULLY MFG. CO



Internal connections of power transformer, filter and bypass condenser can be shown on page 398

(Batt.)



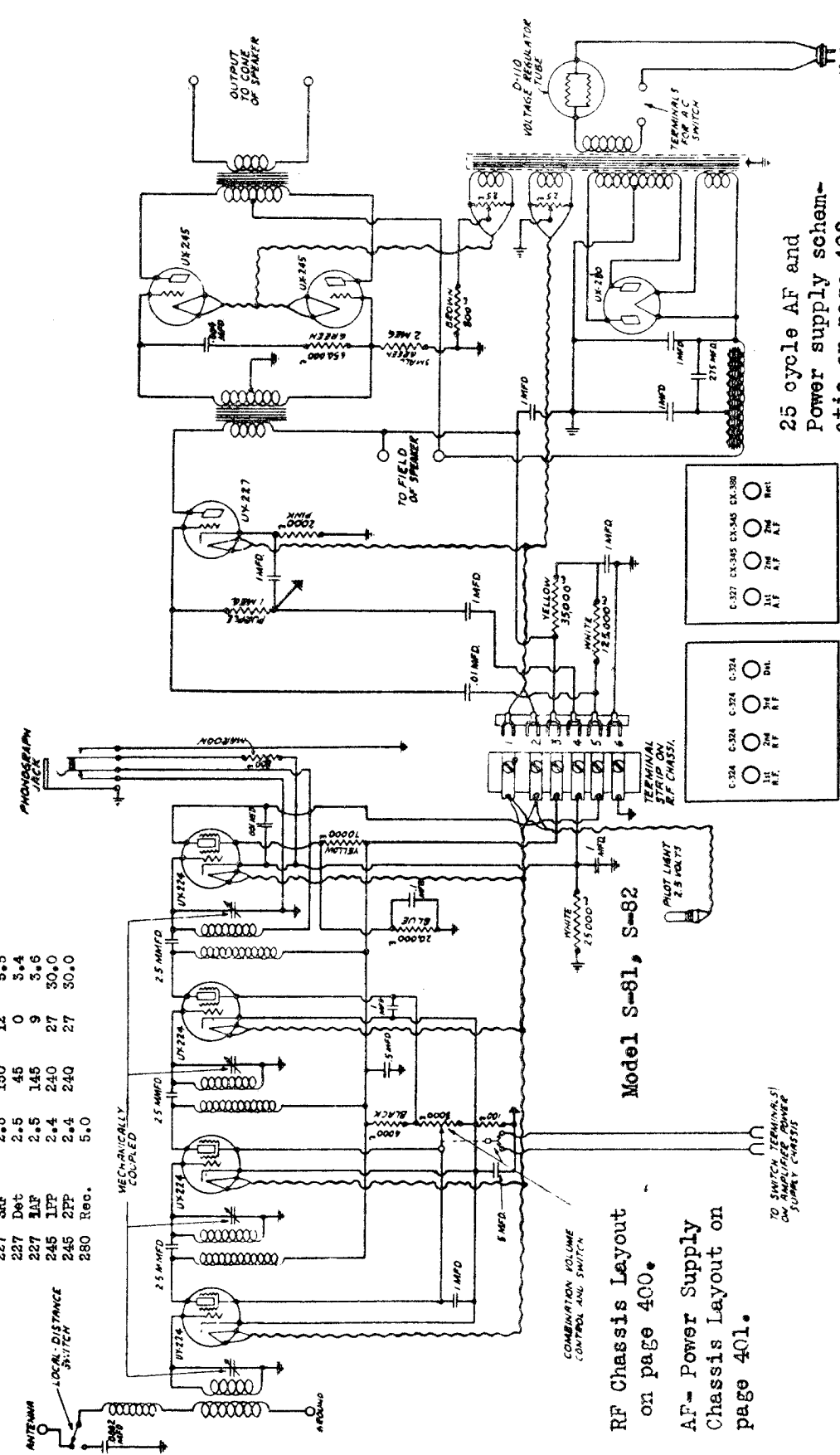
TUBE	TYPE	SUBSTITUTION	TUBE COAT		TUBE IN TESTER		RESISTORS PLUG IN SOCKET OF SET		WATTAGE	REMARKS		
			VOLTS	AMPS	VOLTS	MA	RESISTOR VALUE	RESISTOR VALUE				
227	18X RP	6X17	2.75	1.60	2.5	152	13	15	3.0	6.1	3.1	
227	2nd RF	6X17	2.75	1.60	2.5	152	13	13	3.0	11.8	8.8	
227	3rd RF	6X17	2.75	1.60	2.5	152	13	13	3.0	11.8	8.8	
227	Det.	6X27	2.75	1.60	2.5	152	13	13	3.4	3.2	0	
227	1st AF	6X25	2.75	1.60	2.5	44	13	13	3.7	4.5	0.6	
245	2nd AF	6X25	2.65	2.05	2.45	165	—	—	25	30	4	
245	Rect.	6X25	2.65	2.05	2.45	255	—	—	25	30	4	
260	Ballast	7T	4.05	—	4.75	255	—	—	80	—	—	

AF and Power Unit Chassis layout is shown on the reverse side of this page.

BREMER-TULLY MFG. CO

MODEL S-81, S-82

	A	B	C	Plate Current
227 IRP	2.5	150	12	5.5 ms
227 ZRF	2.5	150	12	5.5
227 XRF	2.5	150	12	5.5
227 Det	2.5	45	0	5.4
227 IAF	2.5	145	9	3.6
245 LFP	2.4	240	27	30.0
245 PFP	2.4	240	27	30.0
280 Rec.	5.0			



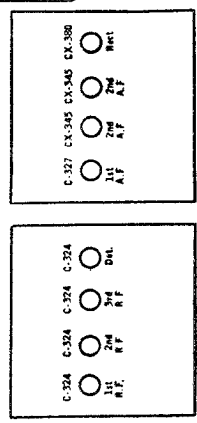
25 cycle AF and Power supply schematic on page 402.

Model S-81, S-82

RF Chassis Layout on page 400.

AF- Power Supply Chassis Layout on page 401.

TO SWITCH TERMINALS ON AMPLIFIER POWER SUPPLY CHASSIS



ANTENNA LOCAL DISTANCE SWITCH

MECHANICALLY COUPLED

COMBINATION VOLUME CONTROL AND SWITCH

TO FIELD OF SPEAKER

TO FIELD OF SPEAKER

TO FIELD OF SPEAKER

TO FIELD OF SPEAKER

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TO FIELD OF SPEAKER

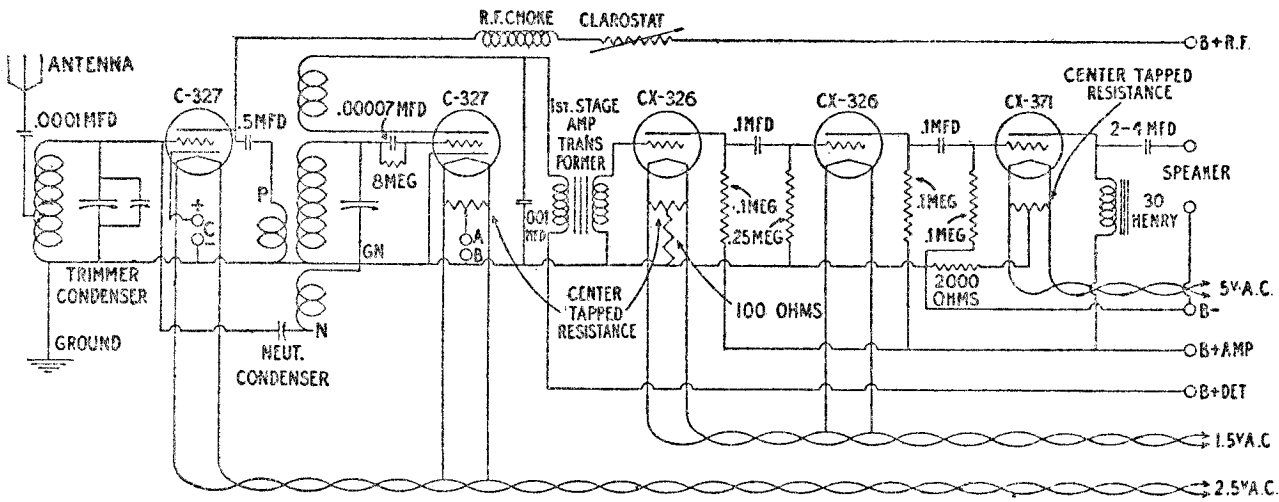
TO FIELD OF SPEAKER

TO FIELD OF SPEAKER

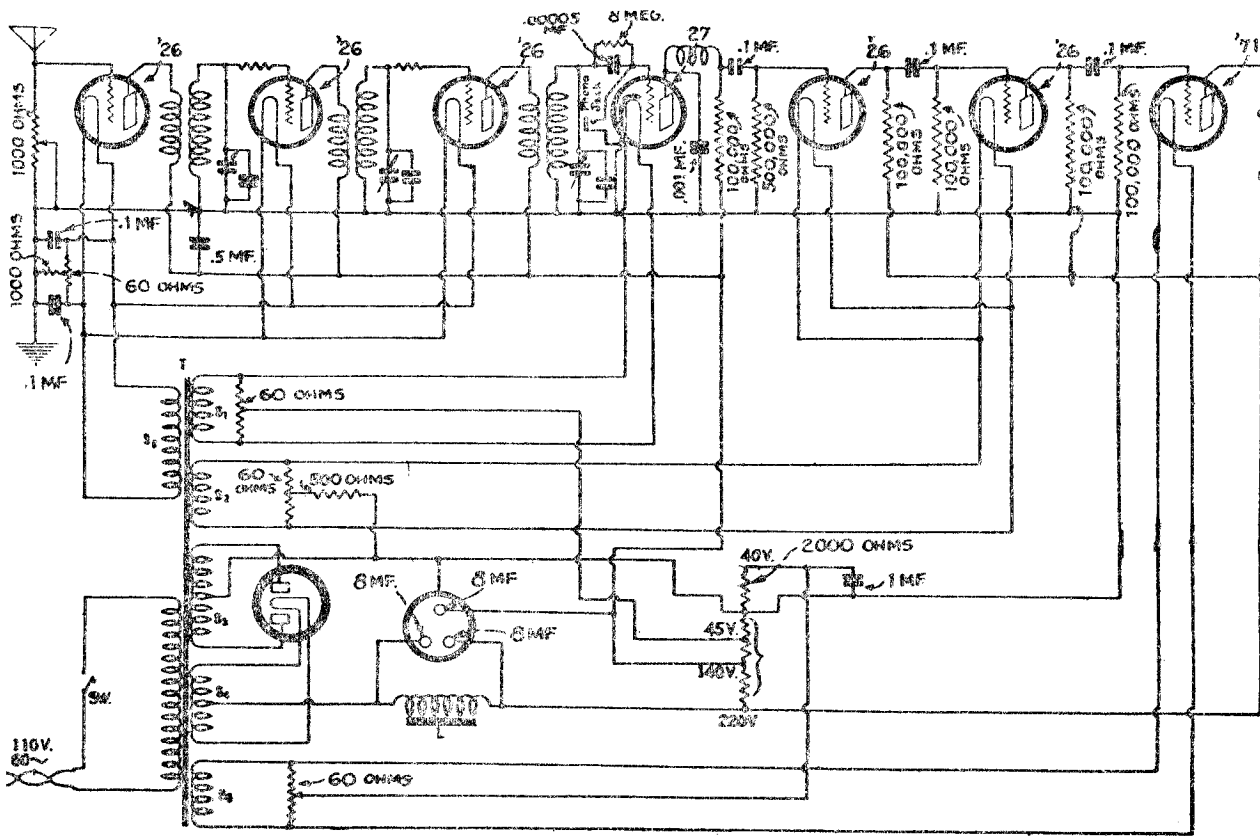
TO FIELD OF SPEAKER

BROWNING - DRAKE CORP.

MODEL 5 Tube AC Kit
MODEL 34, 36, 38



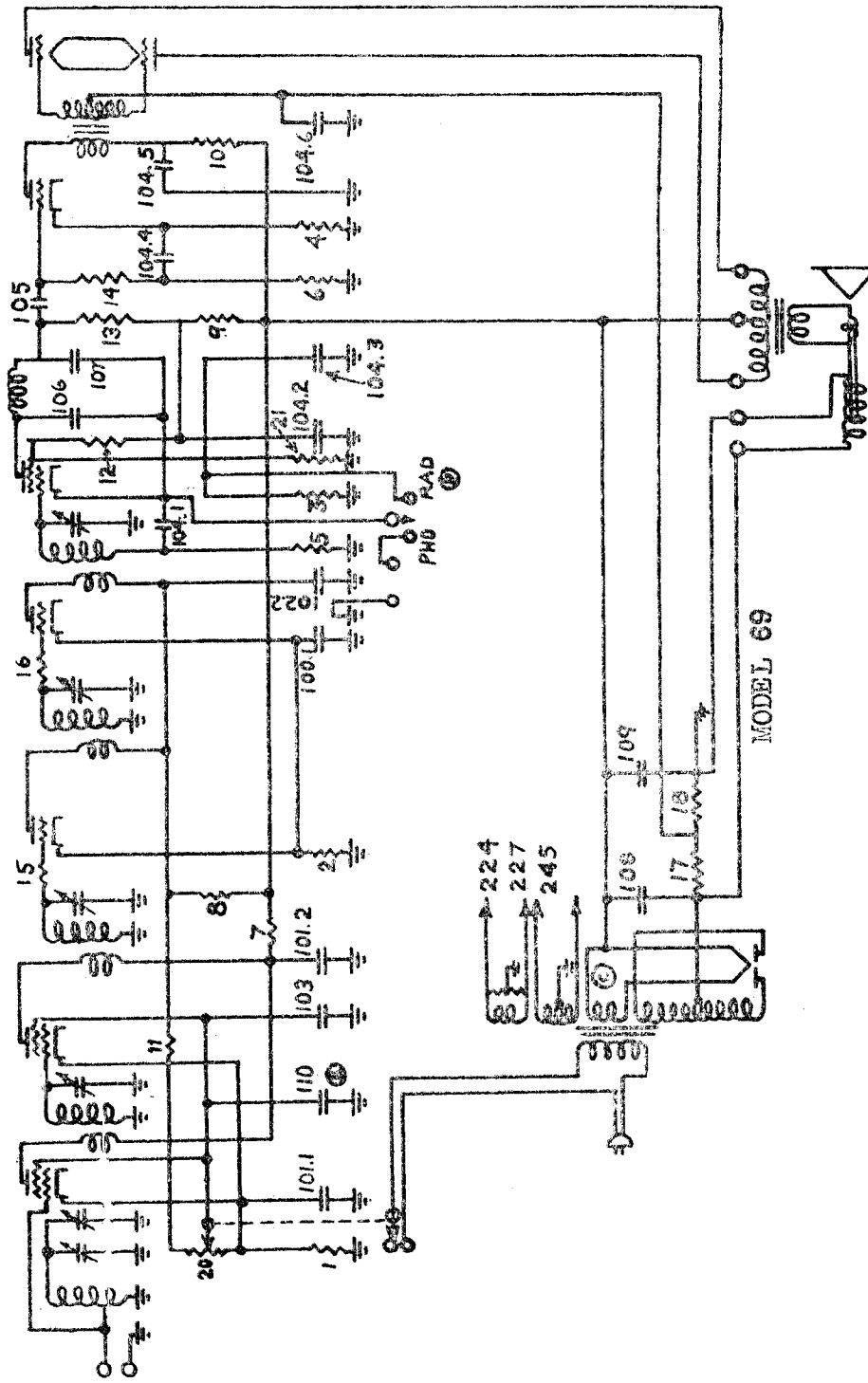
THE SCHEMATIC WIRING OF THE FIVE TUBE A-C



BROWNING DRAKE 34, 36 and 38

MODEL 69

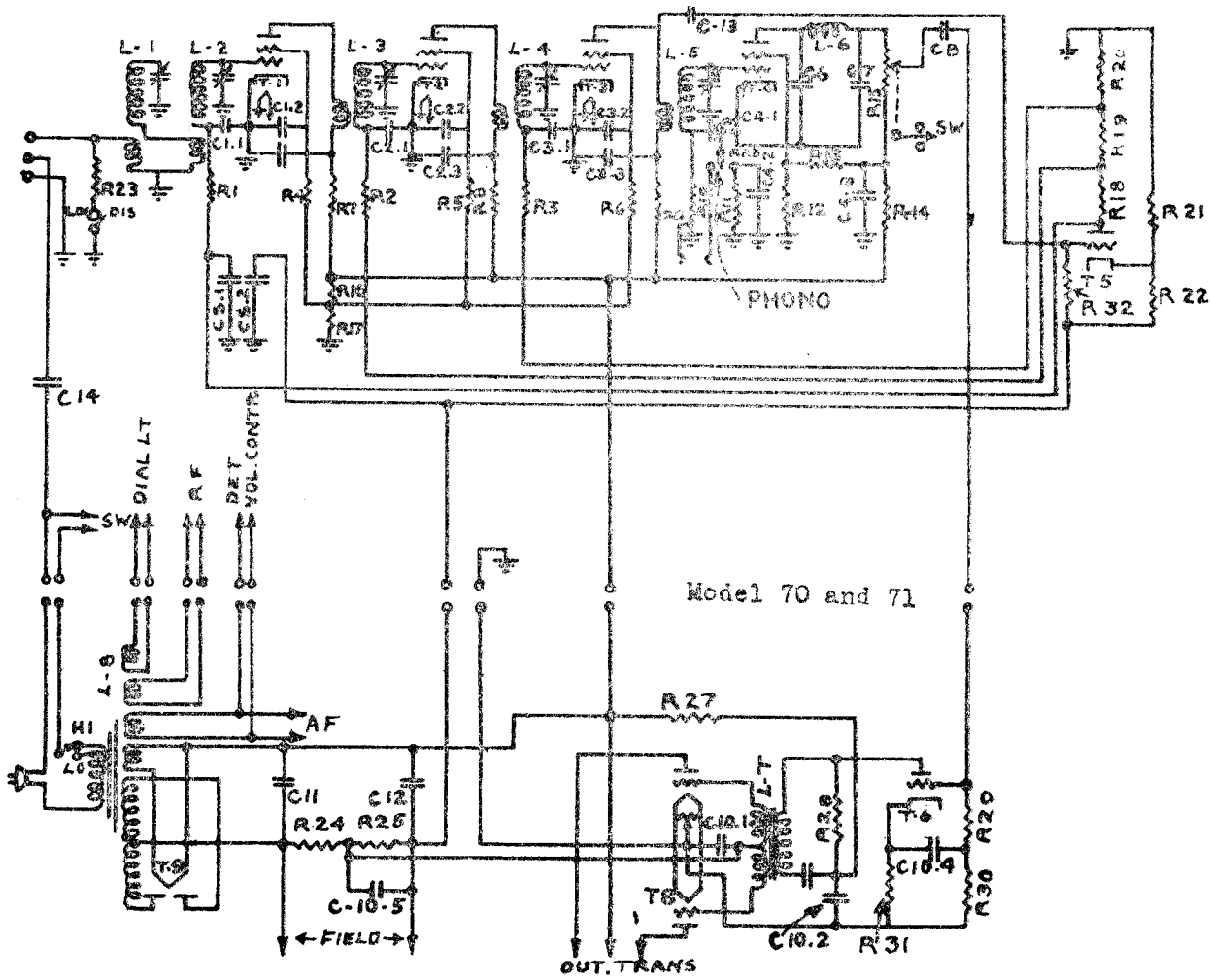
BROWNING - DRAKE CORP.



- 1. 400 ohms; 2. 600 ohms; 3. 50000 ohms; 4. 3000 ohms; 5. .5 megohm; 6. 1 megohm; 7. 45000 ohms;
- 8. 20000 ohms; 9. .25 megohm; 10. 60000 ohms; 11. 90 ohms; 12 and 13. .25 megohm; 14. 2 megohms
- 15. 2000 ohms; 16. 2000 ohms; 17 and 18. .25 megohms; 19. 30 ohms; 20. 10000 ohms; 21. .1 megohm
- 101.1 and 101.2 and 102.1 and 102.2 are .5 mfd. each; 103 is .1 mfd. 104.1 and 104.2 and 104.3 and
- 104.4 and 104.5 are .2 mfd.; 104.6 is .5 mfd.; 105. .01 mfd.; 106. .00025 mfd.; 107. .00025 mfd.;
- 108 and 109 are 8 mfd. and 110 is .01 mfd.

BROWNING - DRAKE CORP.

MODEL 70, 71

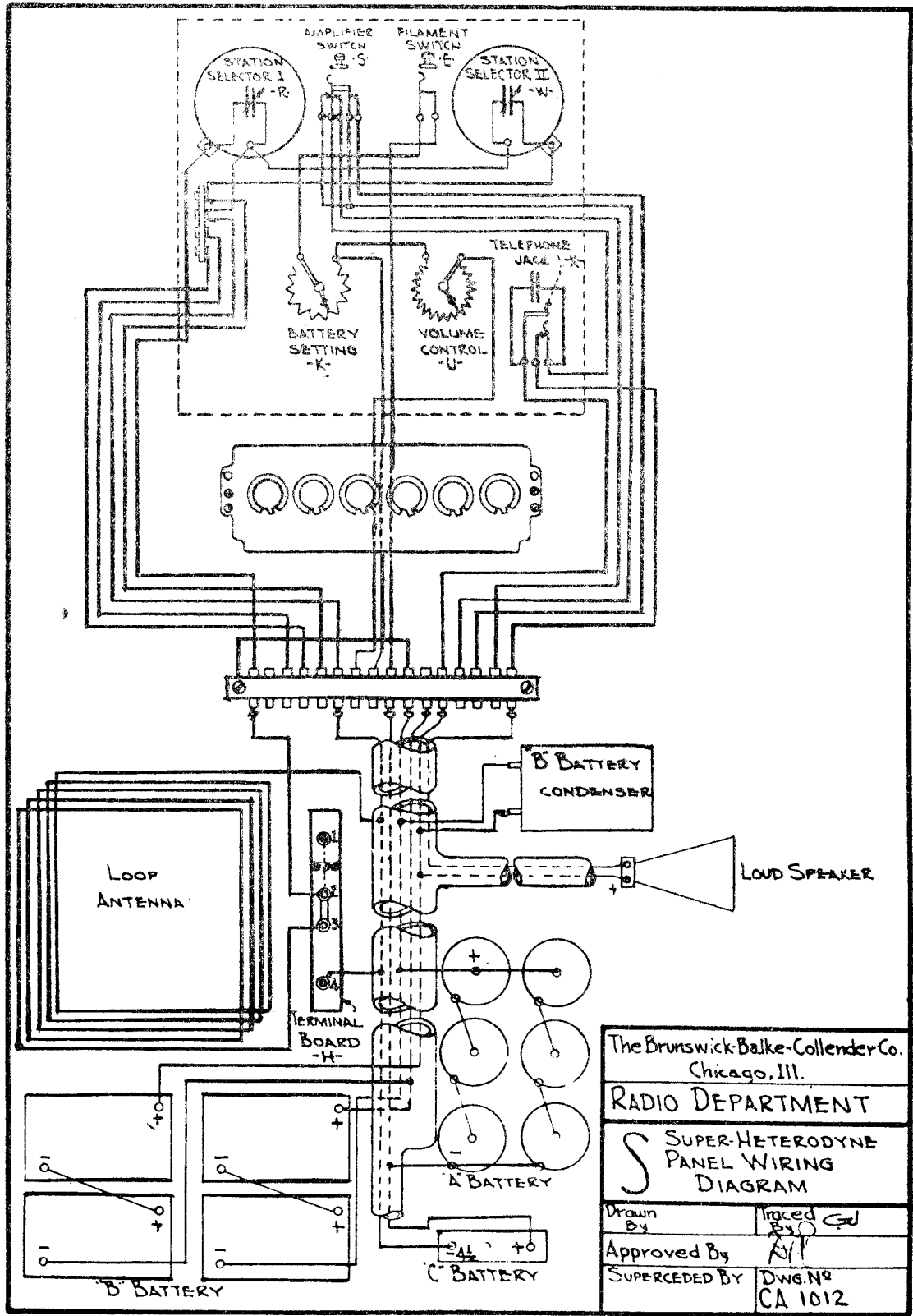


Model 70 and 71

R1,R2,R3,R14,R15	.25 megohm	R28	20000 ohms
R4,R5,R6	10000 ohms	R30,R32	2 megohms
R7,R8,R9	20000 ohms	R31	2000 ohms
R10,R29	1 megohm	C1.1;C2.1;C3.1;C1.2;C2.2;C3.2	.1 mfd
R11,R18,R19	40000 ohms	C1.3;C2.3;C3.3	.1 mfd
R12	.1 megohm	C4.1;C4.2	.1 mfd.
R13	.25 megohm	C4.3	.25 mfd
R16	40000 ohms	C5.1; C5.2	1. mfd
R17	90000 ohms	C6,C7, C13	.00025 mfd
R20	200000 ohms	C8	.01 mfd.
R21	300 ohms	C10.1	.25 mfd
R22	45 ohms	C10.2	.5 mfd
R23,R26	20 ohms	C10.3	.1 mfd
R24	.5 megohm	C10.4	.2 mfd
R25	.15 megohm	C10.5	2. mfd
R27	10000 ohms	C14	.00025 mfd

MOD. M. Superheterodyne
Panel Wiring

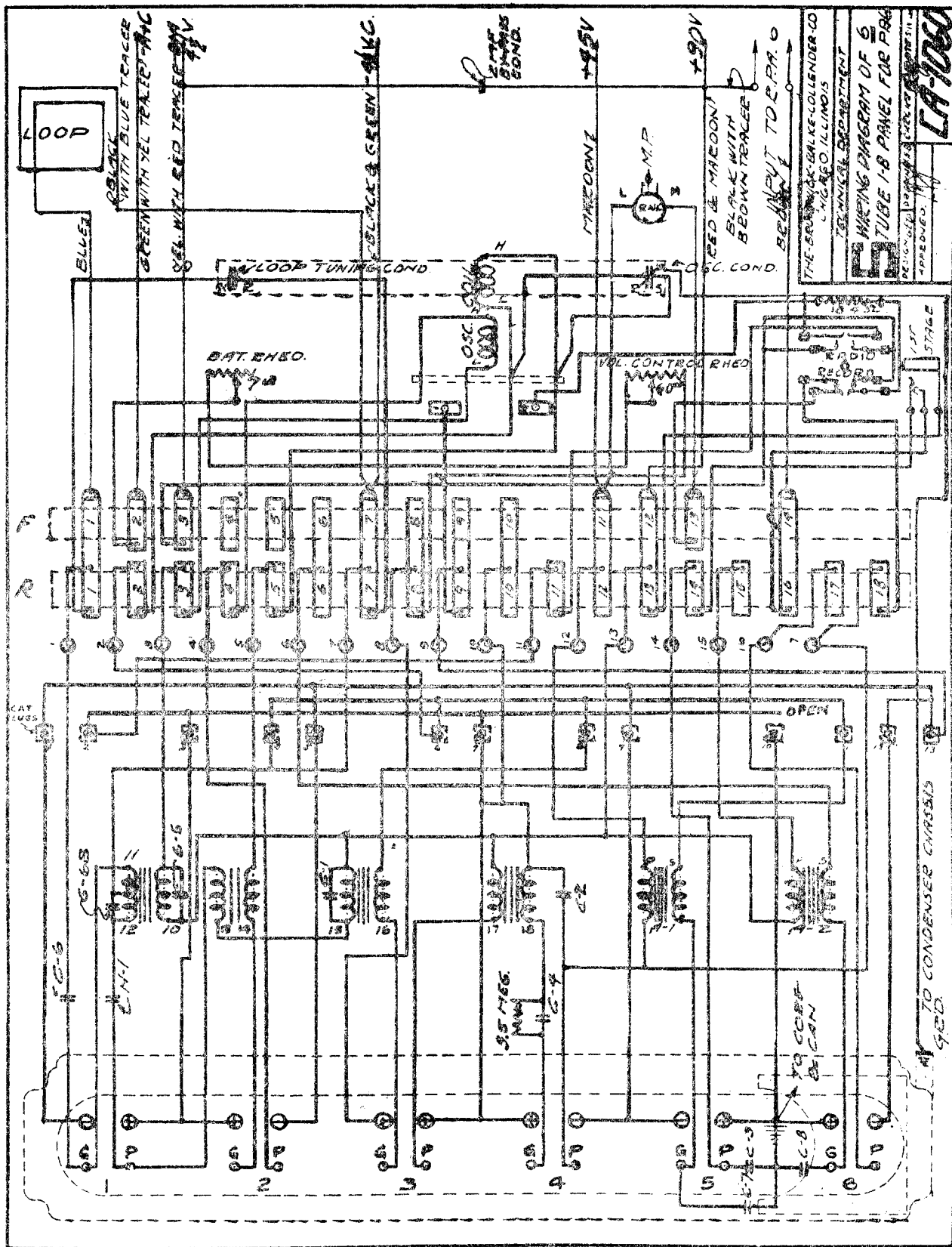
BRUNSWICK RADIO CORPORATION



The Brunswick-Balke-Collender Co. Chicago, Ill.	
RADIO DEPARTMENT	
SUPER-HETERODYNE PANEL WIRING DIAGRAM	
Drawn By	Traced By
Approved By	
SUPERCEDED BY	DWG. NO. CA 1012

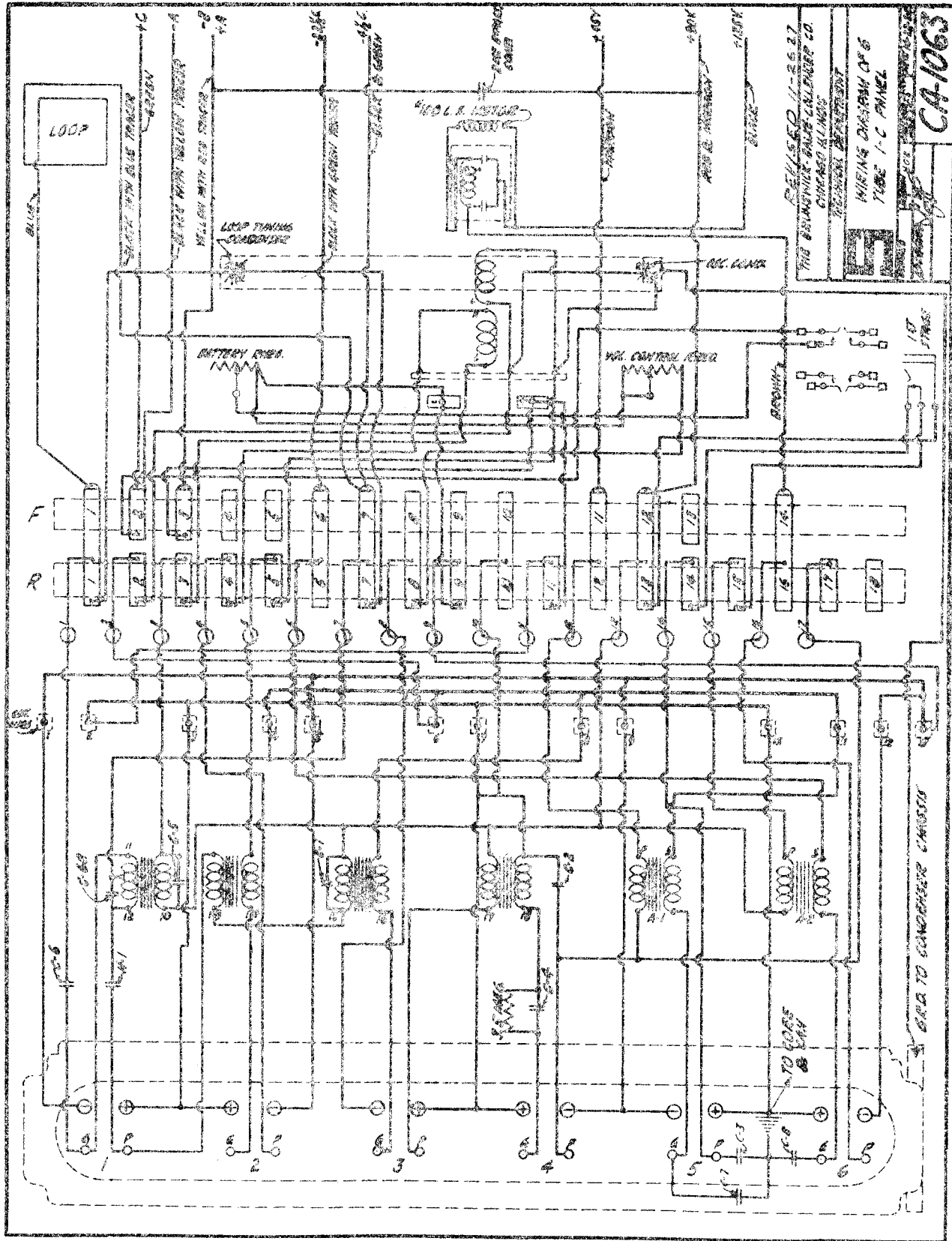
BRUNSWICK RADIO CORPORATION

MODEL PR-6
6 Tube 1-B Panel



MODEL PR-6
6 Tube 1-C
Panel

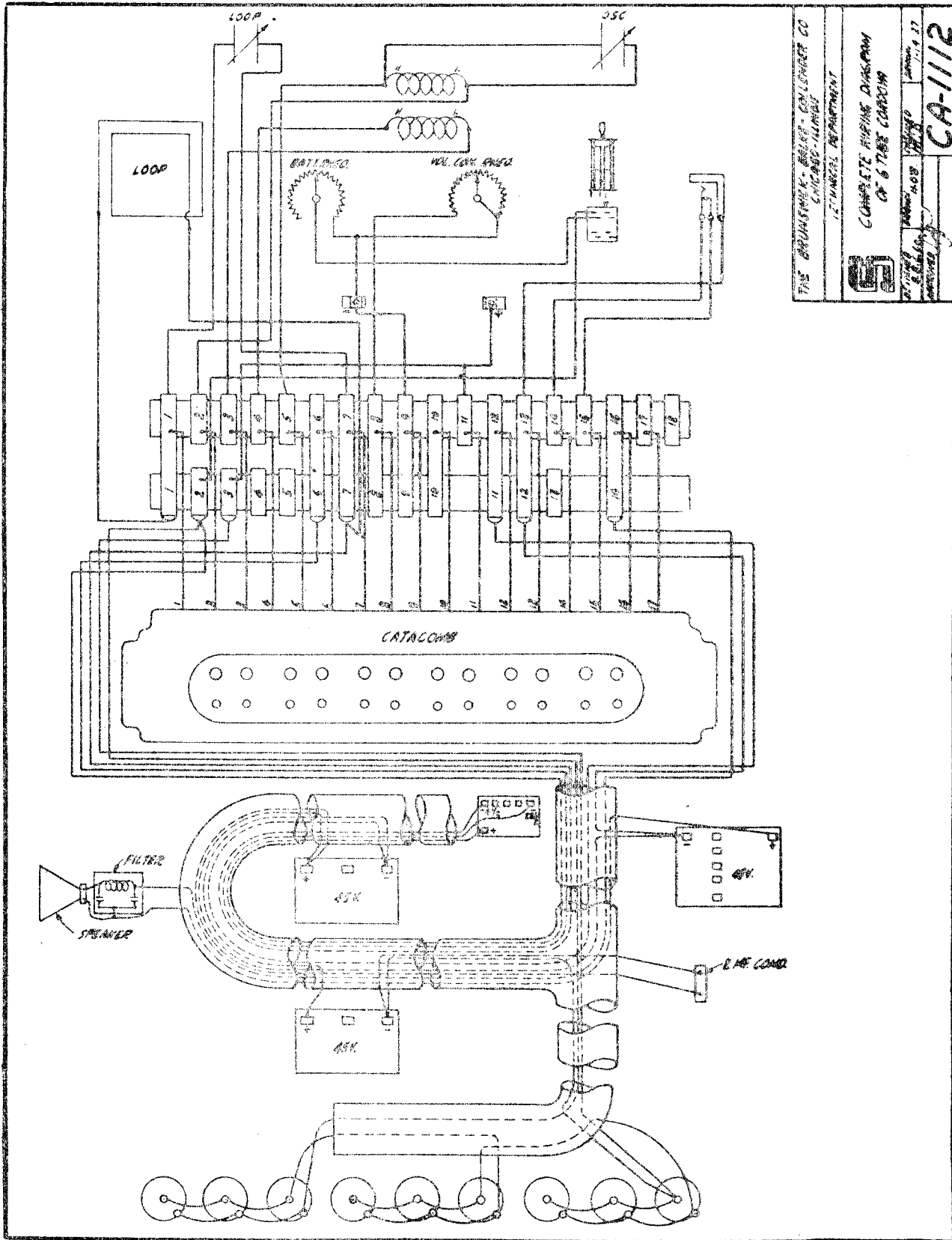
BRUNSWICK RADIO CORPORATION



REVISED 11-26-37
THE BRUNSWICK-RADIO-CORPORATION CO.
CHICAGO, ILLINOIS
WIRING DIAGRAM OF 6
TUBE 1-C PANEL
CA-1063

BRUNSWICK RADIO CORPORATION

MODEL 6 Tube
Cordova



THE BRUNSWICK-BUSCH-CONDORSET CO.
CHICAGO-ILLINOIS
12. MODEL DEPARTMENT

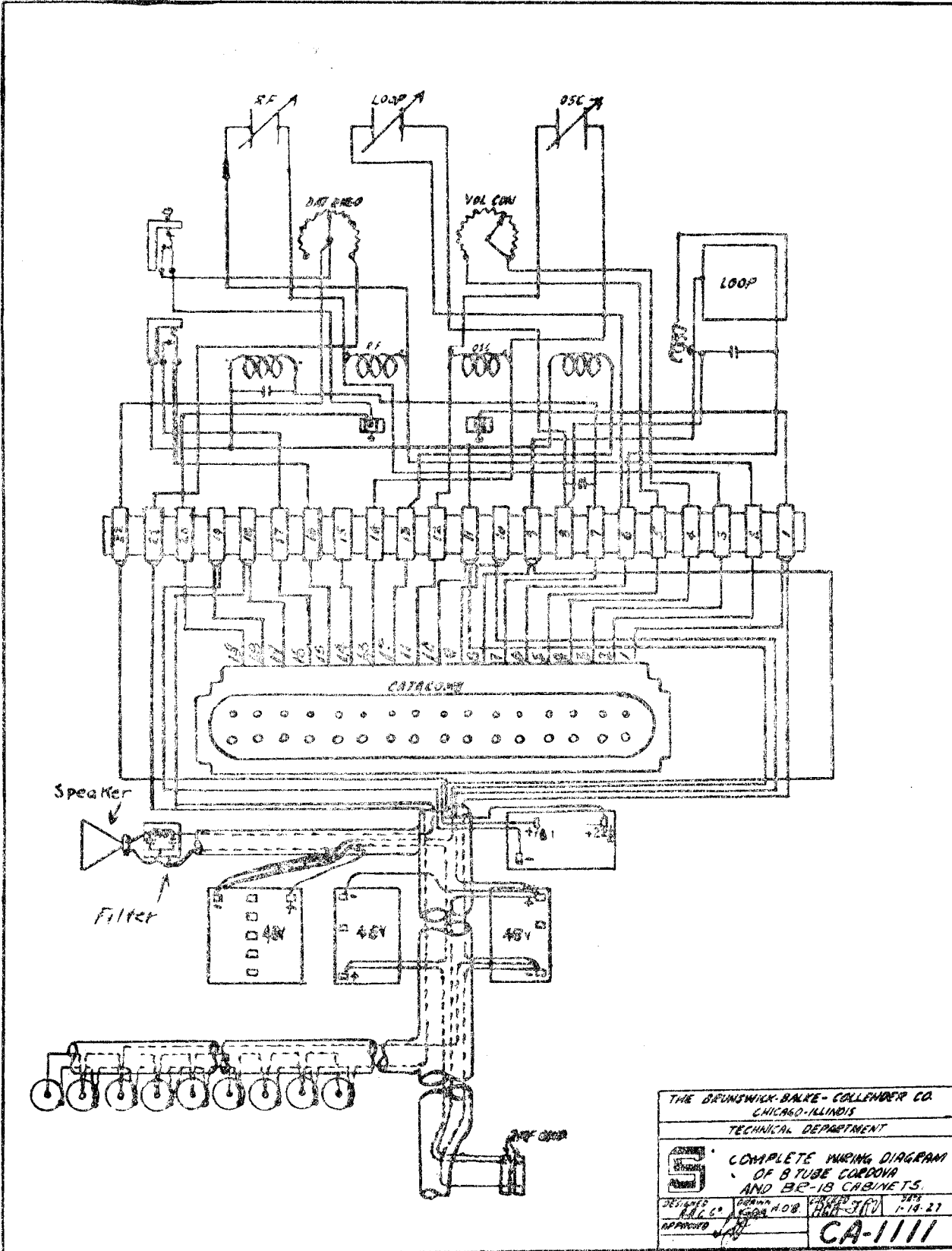
COMPLETE WIRING DIAGRAM
OF 6 TUBE CORDOVA

REVISED BY HOB
APPROVED BY
DATE 11.19.37

CA-1112

MODEL 8 Tube
Cordova

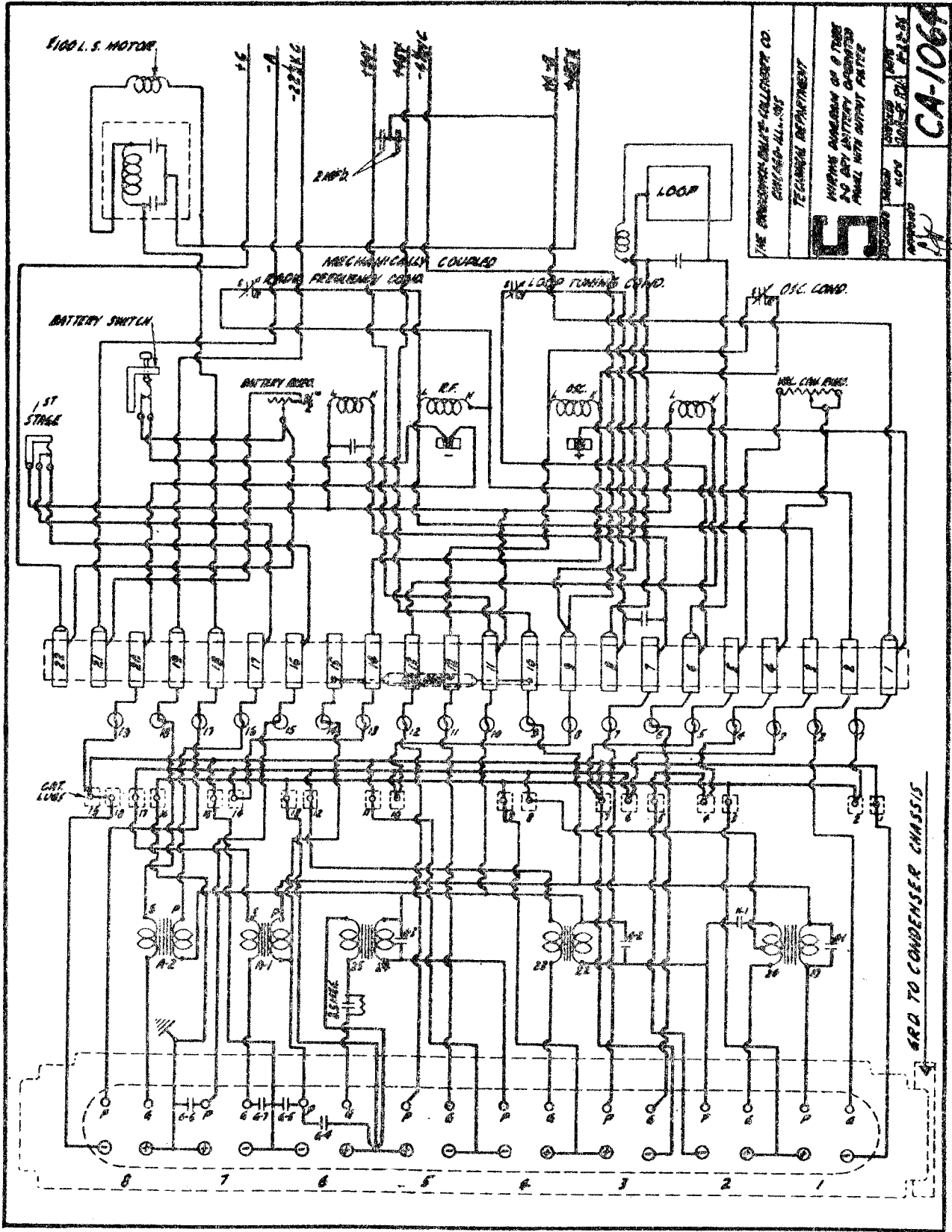
BRUNSWICK RADIO CORPORATION



THE BRUNSWICK-BALKE-COLENDER CO.	
CHICAGO-ILLINOIS	
TECHNICAL DEPARTMENT	
COMPLETE WIRING DIAGRAM OF 8 TUBE CORDOVA AND BE-18 CABINETS.	
DESIGNED R.G.C.	DESIGNED HOB
APPROVED J.A.B.	APPROVED H.W. J.F.V.
1-19-27	
CA-1111	

BRUNSWICK RADIO CORPORATION

MODEL 8 Tube
2-D Battery



THE BRUNSWICK RADIO CORPORATION
CHICAGO, ILL., U.S.A.

TECHNICAL DEPARTMENT

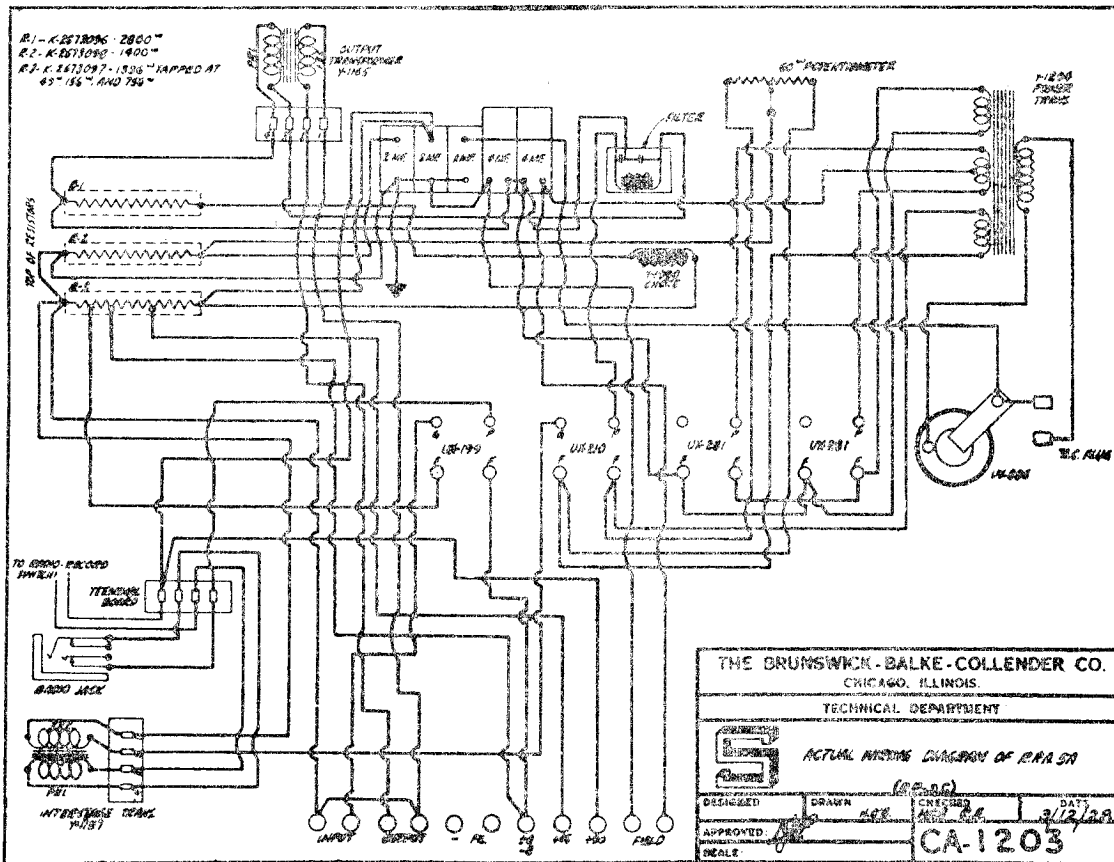
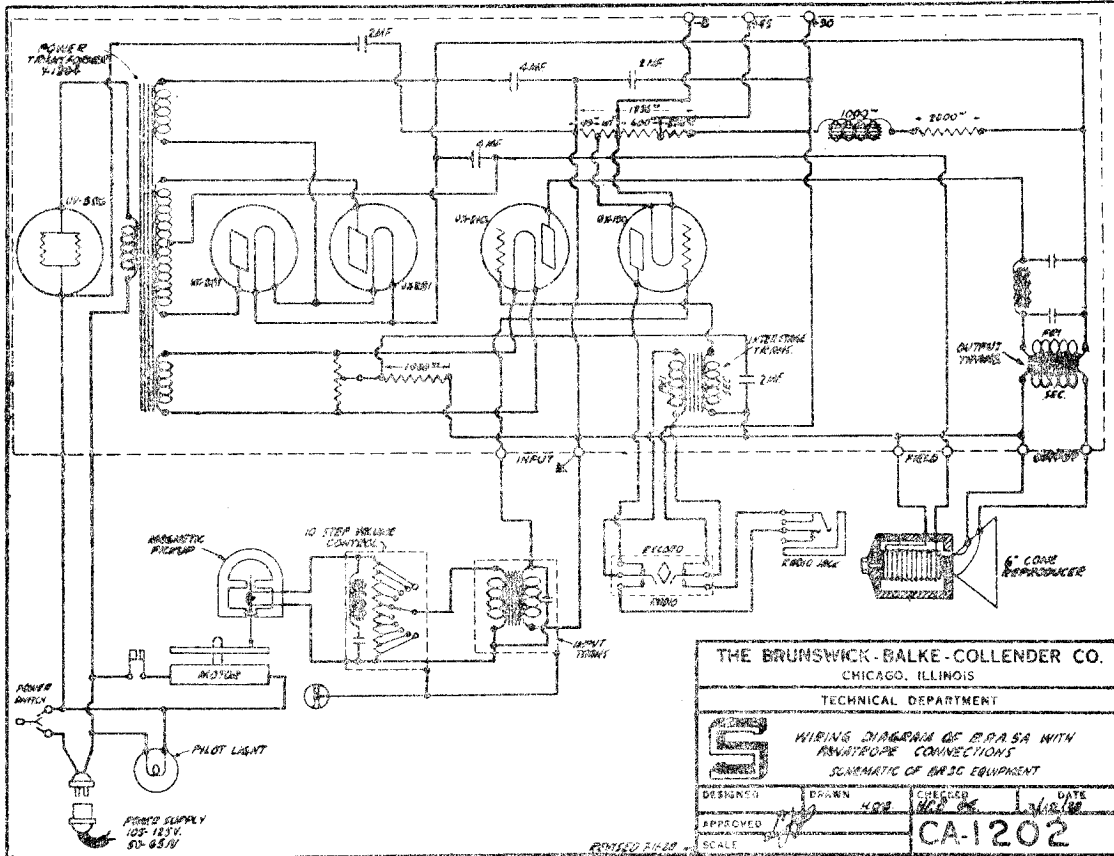
WIRING DIAGRAM OF A TUBE
2-D BATTERY OPERATED
MODEL WITH OUTPUT FILTER

CA-1064

ARD TO CONDENSER CHASSIS

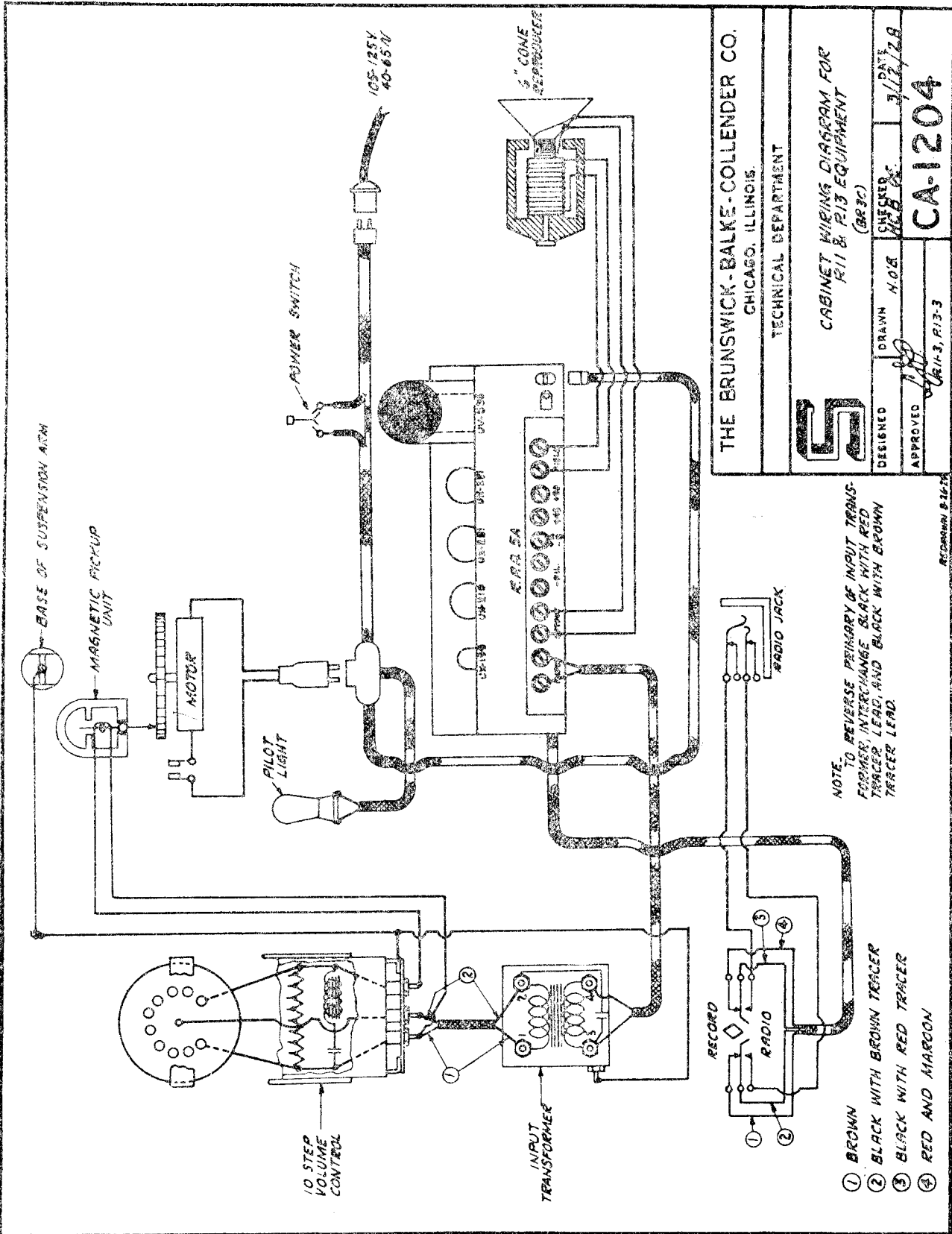
MODEL RPA-5A

BRUNSWICK RADIO CORPORATION



BRUNSWICK RADIO CORPORATION

MODEL P-11, P-13
Cabinet Wiring



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS
TECHNICAL DEPARTMENT

CABINET WIRING DIAGRAM FOR
P-11 & P-13 EQUIPMENT
(BR-30)

DESIGNED: H.O.B.
DRAWN: H.O.B.
CHECKED: H.O.B.
APPROVED: H.O.B.

DATE: 3/12/28
CA-1204

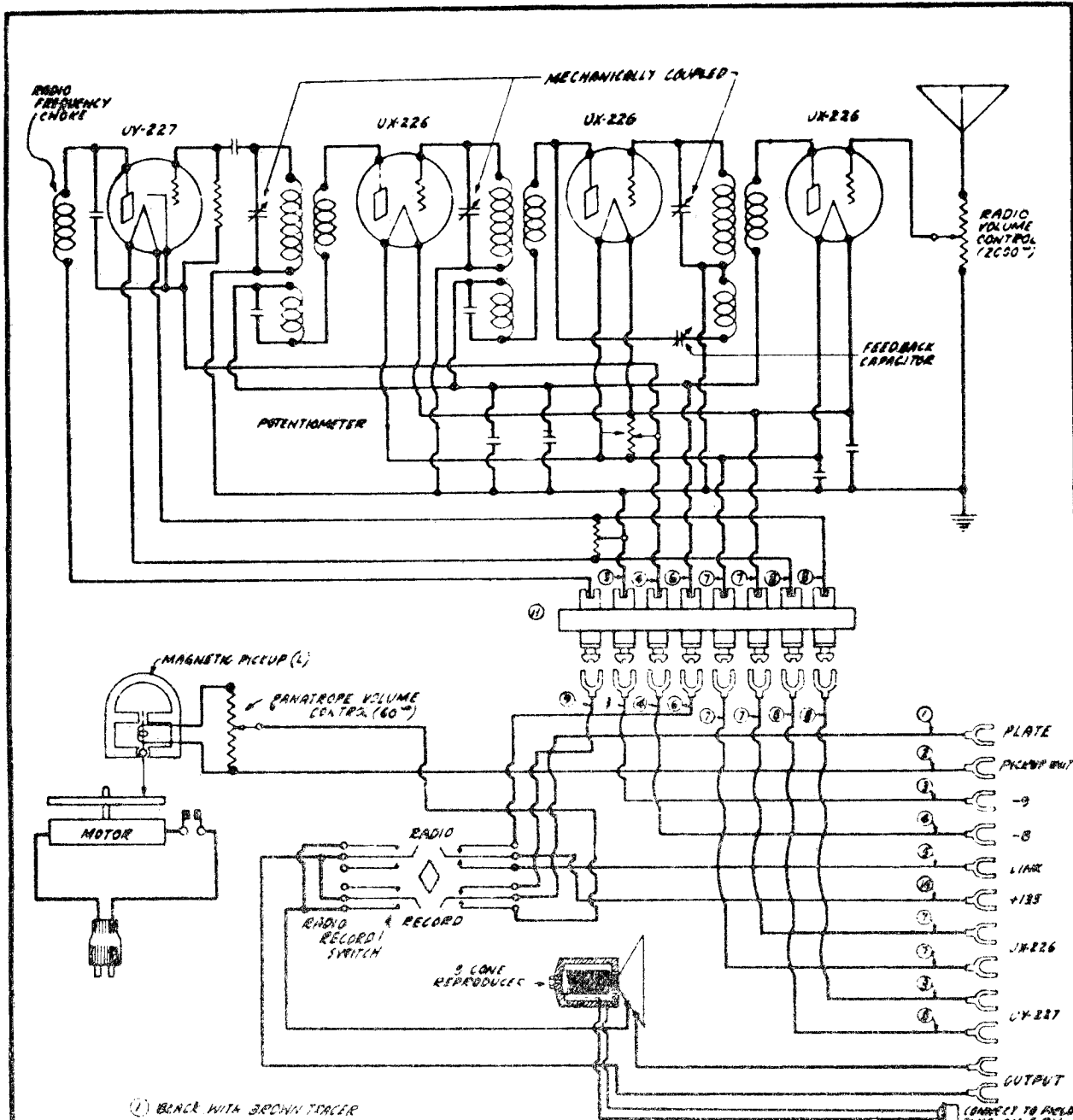
REVISION: P-13-3

NOTE: TO REVERSE PRIMARY OF INPUT TRANSFORMER, INTERCHANGE BLACK WITH RED TRACER LEAD, AND BLACK WITH BROWN TRACER LEAD.

- ① BROWN
- ② BLACK WITH BROWN TRACER
- ③ BLACK WITH RED TRACER
- ④ RED AND MARCON

MODEL 3 KR8
RF Schematic

BRUNSWICK RADIO CORPORATION



- ① BLACK WITH BROWN TRACER
- ② BROWN
- ③ BLACK WITH GREEN TRACER
- ④ BLACK WITH RED TRACER
- ⑤ MAROON
- ⑥ RED AND MAROON
- ⑦ BLACK WITH YELLOW TRACER
- ⑧ BLUE
- ⑨ RED
- ⑩ BLACK
- ⑪ BROWN WITH WHITE TRACER

BRUNSWICK—Model 3KR8
Line Voltage 115—Volume Control Minimum

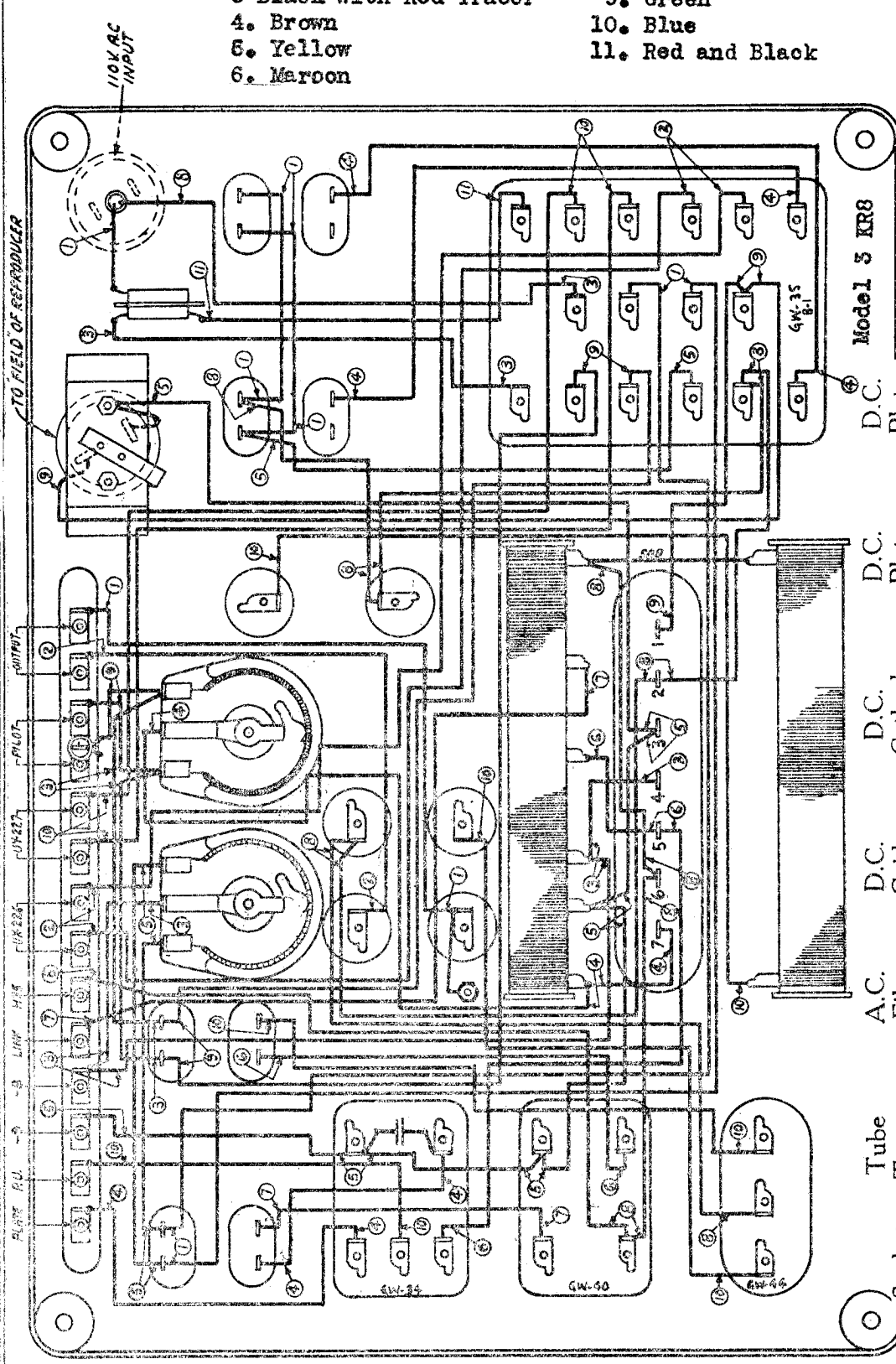
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST BY DET. ETC.)	TUBE OUT						TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	MODERATE PLATE D.C.	PLATE D.C. TEST	PLATE D.C. CHANGE	PLATE D.C. CHANGE		
1	226	1st. A.F.	1.5	138	1.2	130	5	5	9.5	4.5		
2	226	2nd. A.F.	1.5	158	1.4	130	9	5	9.5	4.5		
3	226	3rd. A.F.	1.5	158	1.4	130	5	5	9.5	4.5		
4	227	Detector	2.4	130	2.2	45	0	2.2	0.2	0		
5	226	1st. D.F.	1.5	138	1.4	130	9	5	10.0	5.0		
6	250	2nd. A.F.	7.0	500	6.6	450	70	50	55.0	5.0		

BRUNSWICK 3 KR8 Radio Chassis

MODEL 3 KR8
SPU Chassis

BRUNSWICK RADIO CORP.

- 1. Black
- 2. Black with Yellow Tracer
- 3. Black with Red Tracer
- 4. Brown
- 5. Yellow
- 6. Maroon
- 7. Maroon and Red
- 8. Red
- 9. Green
- 10. Blue
- 11. Red and Black



Model 3 KR8

THE BRUNSWICK-BALKE-COLENDER CO.
CHICAGO-ILLINOIS
TECHNICAL DIVISION

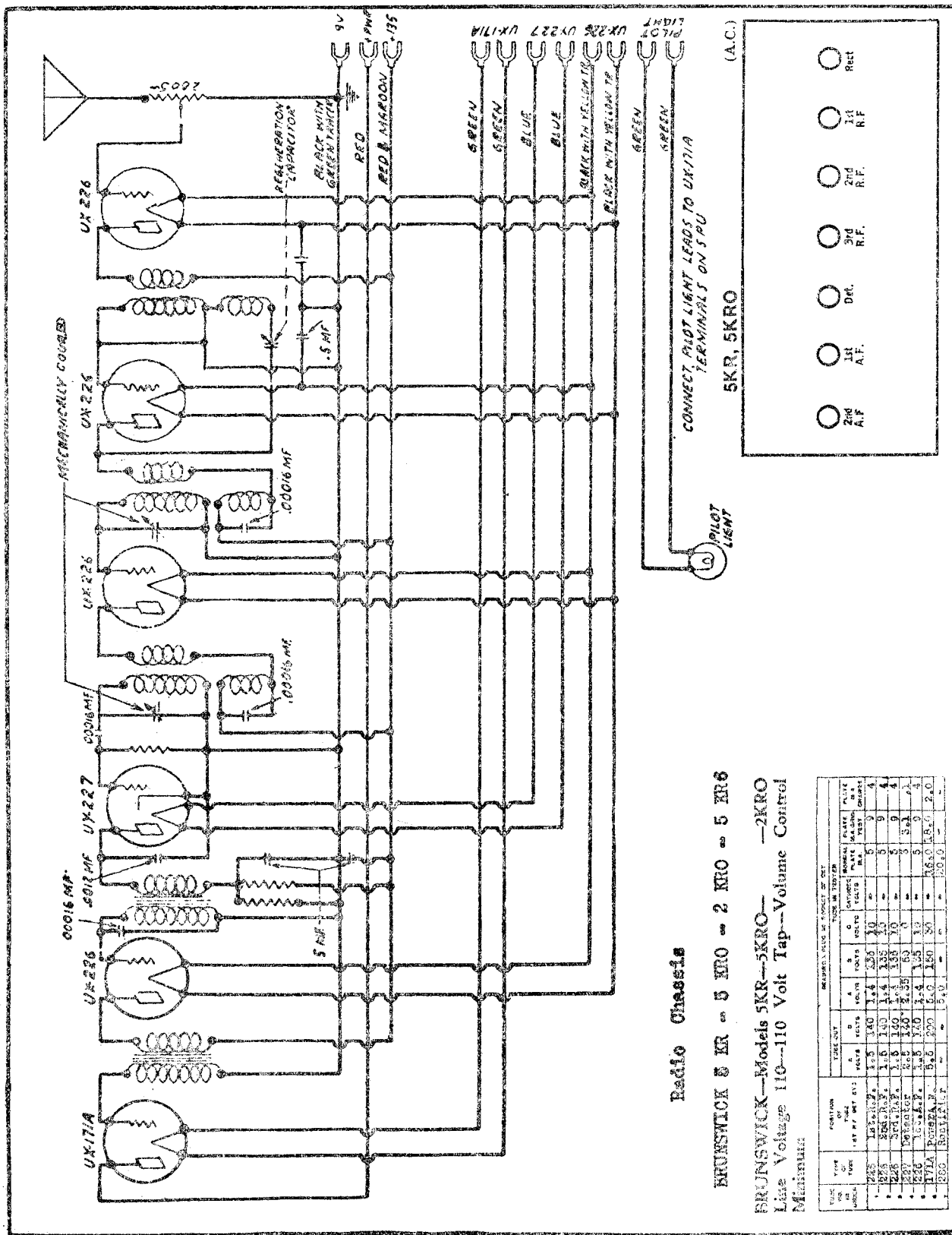
ACTUAL WIRING DIAGRAM OF SPU
USED WITH 3KR8 EQUIPMENT

DATE 11-5-38

Tube Type	A.C. Fil. Voltage	D.C. Grid Voltage	D.C. Cathode Voltage	D.C. Plate Voltage	D.C. Plate Current
1st R. F. UX-226	1.4	-9	None	130	4-6
2nd R. F. UX-226	1.4	-9	None	130	4-6
3rd R. F. UX-226	1.4	-9	None	130	4-6
Detector UY-227	2.1	None*	0	45	2-3

MODEL 5 KR,
5 KRO, 5 KR6
2 KRO RF Schematic

BRUNSWICK RADIO CORP.



Radio Chassis

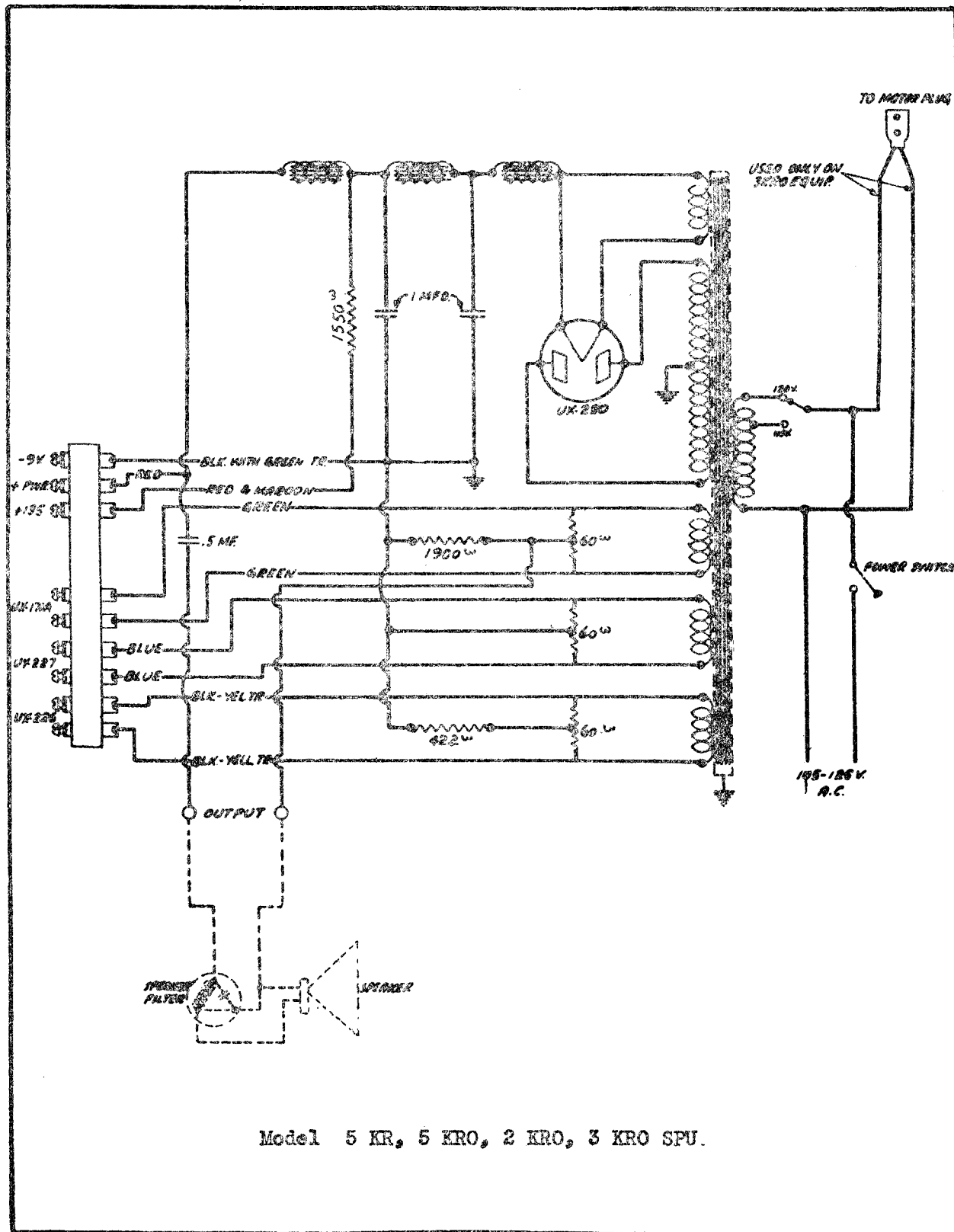
BRUNSWICK 5 KR - 5 KRO - 2 KRO - 5 KR6

BRUNSWICK—Models 5KR—5KRO— —2KRO
Line Voltage 110—110 Volt Tap—Volume Control
Minimum

TUBE NO.	TYPE	POSITION	RESISTANCE VALUE IN OHMS OR KΩ		RESISTANCE VALUE IN OHMS OR KΩ		RESISTANCE VALUE IN OHMS OR KΩ		RESISTANCE VALUE IN OHMS OR KΩ		RESISTANCE VALUE IN OHMS OR KΩ	
			BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.	BY WT. D.V.
1	UX-171A	1	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
2	UX-226	2	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
3	UX-227	3	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
4	UX-226	4	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
5	UX-225	5	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
6	5Y4	6	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00
7	5R5	7	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00	1.5	1.00

BRUNSWICK RADIO CORP.

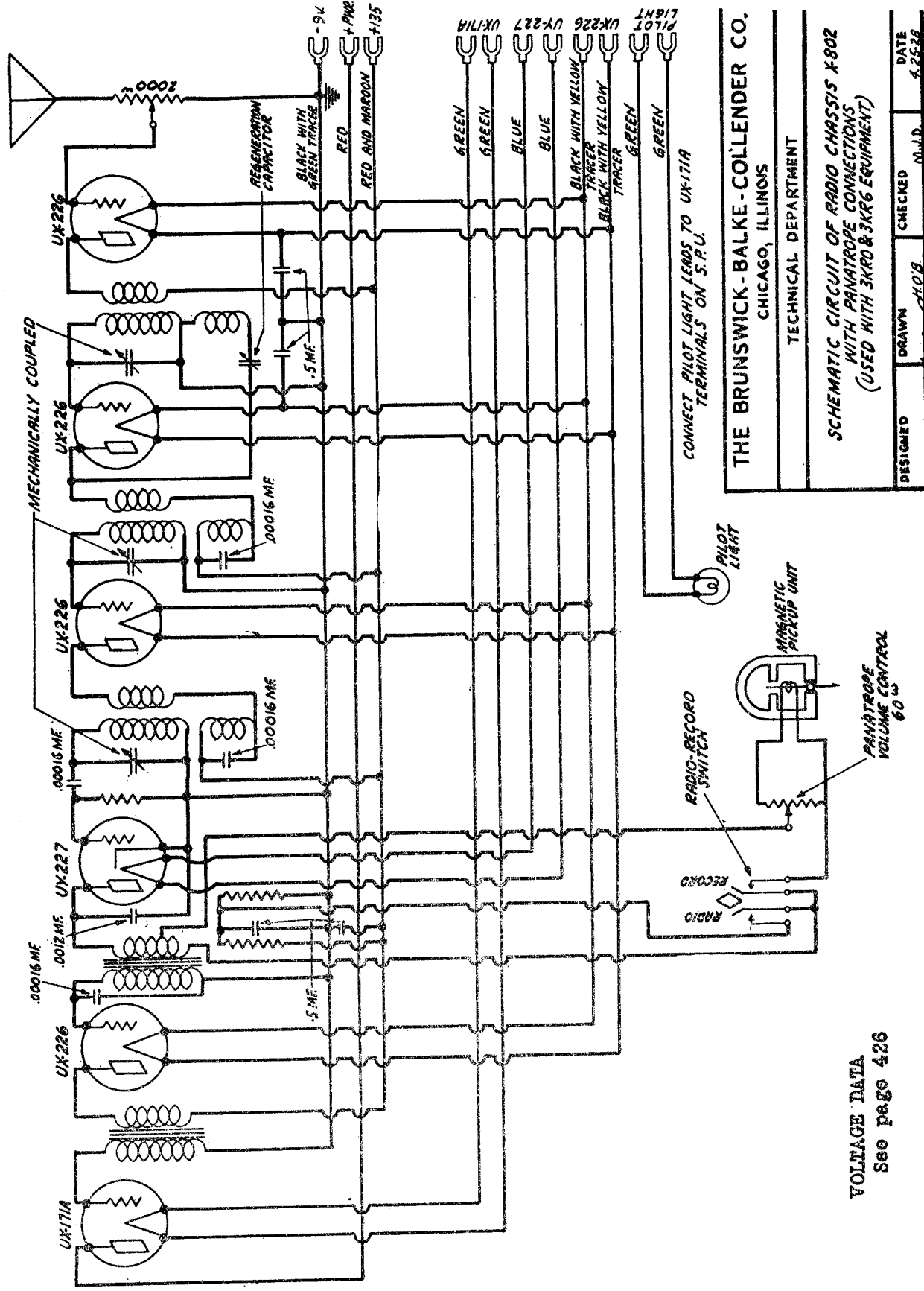
MODEL 5 KR, 5 KRO
2 KRO, 3 KRO
SPU Schematic



Model 5 KR, 5 KRO, 2 KRO, 3 KRO SPU.

MODEL 3 KR0, 3 KR6
RF Schematic

BRUNSWICK RADIO CORP.



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS
TECHNICAL DEPARTMENT

DESIGNED _____ DRAWN *H.O.B.* CHECKED _____ DATE *4-25-38*

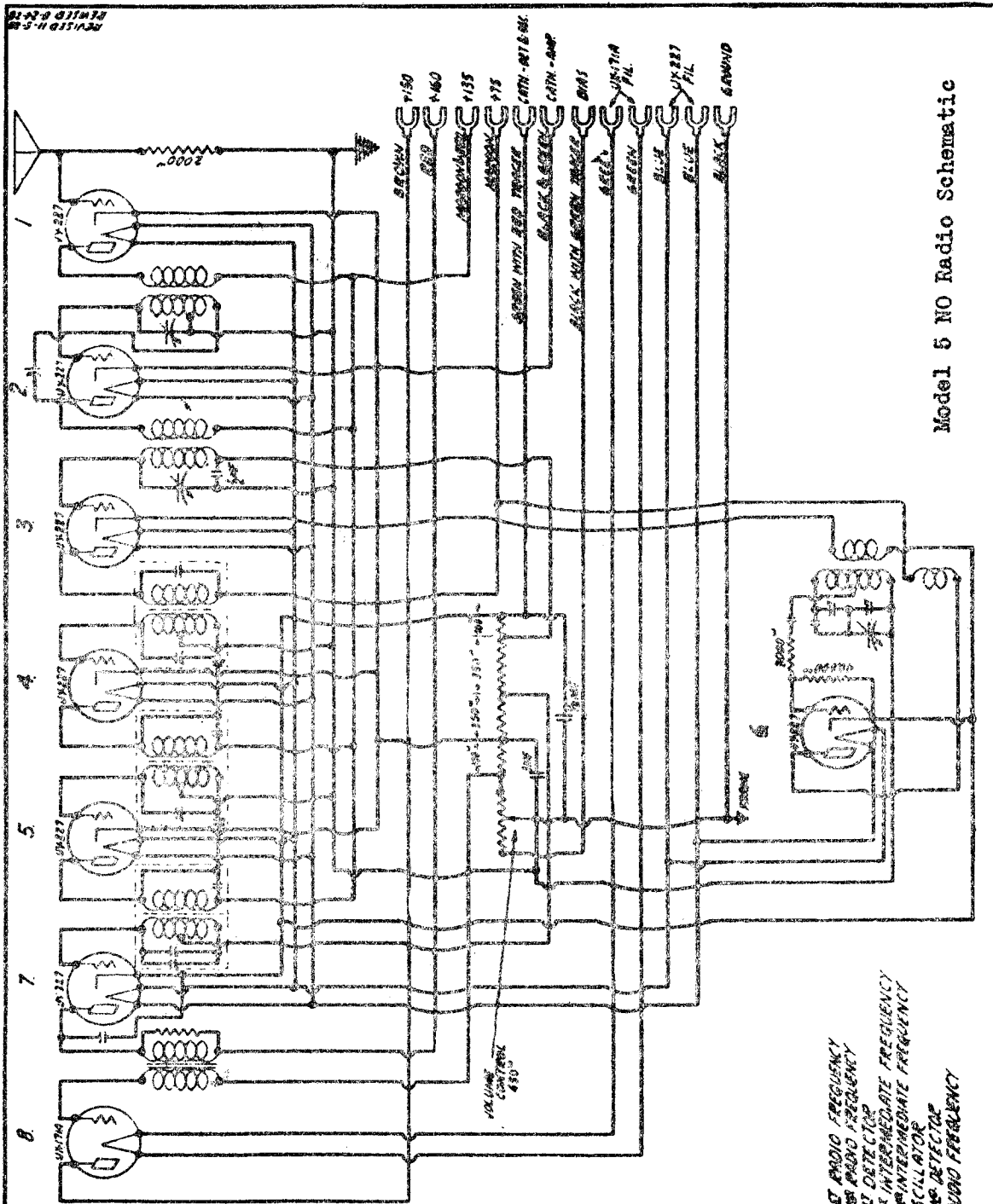
SCHEMATIC CIRCUIT OF RADIO CHASSIS X-802
(USED WITH 3KR0 & 3KR6 EQUIPMENT)

VOLTAGE DATA
See page 426

BRUNSWICK RADIO CORP.

MODEL 5 NO
RF Schematic

REVISED 11-5-35
R-5-35



Model 5 NO Radio Schematic

- 1 1st RADIO FREQUENCY
- 2 2nd RADIO FREQUENCY
- 3 1st DETECTOR
- 4 1st INTERMEDIATE FREQUENCY
- 5 2nd INTERMEDIATE FREQUENCY
- 6 OSCILLATOR
- 7 2nd DETECTOR
- 8 AUDIO FREQUENCY

5NO (A.C.)

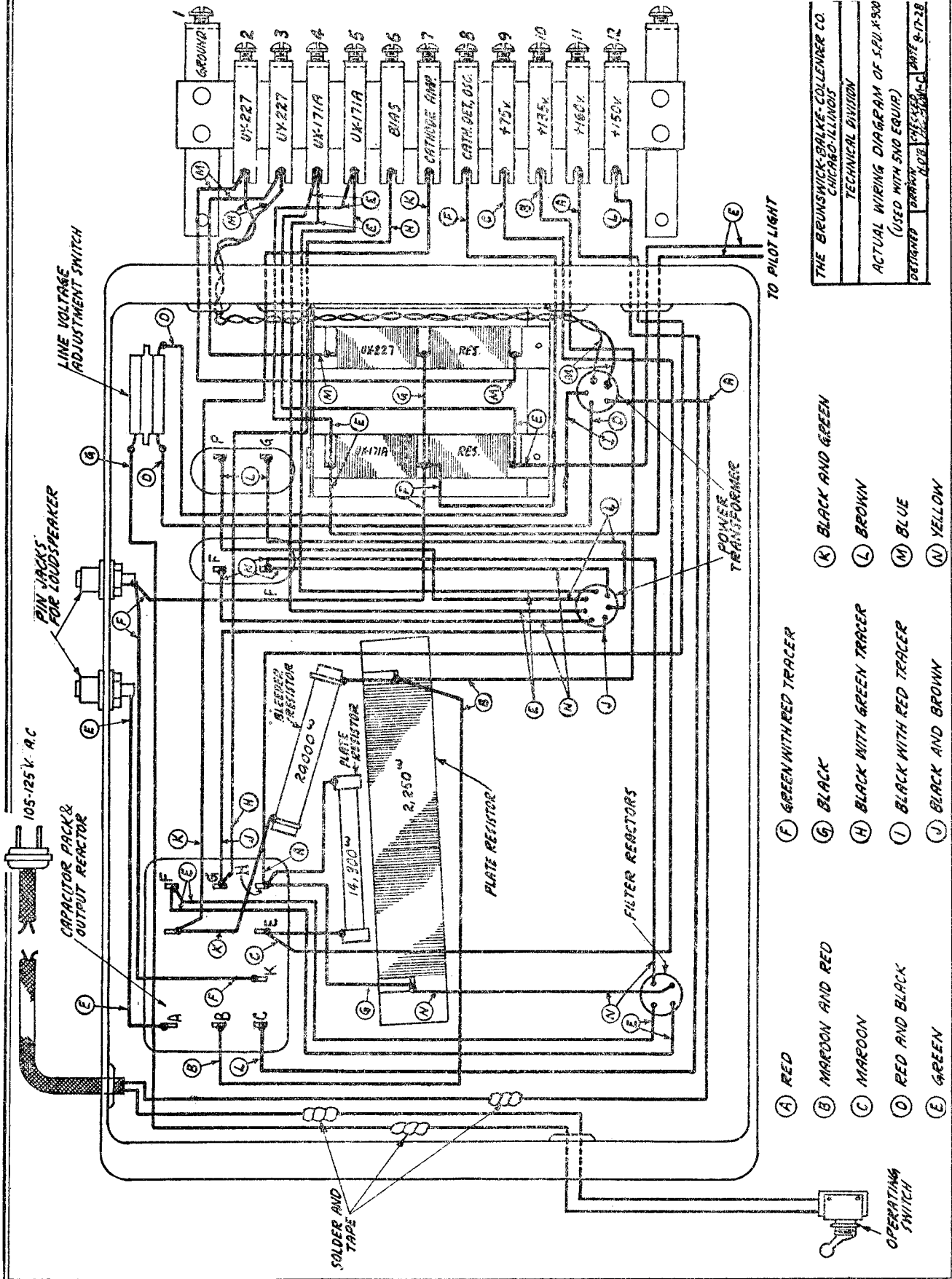
CX-371A	C-327	C-327	C-327	C-327	C-327	C-327	CX-380
A.F. AMP.	Power Det.	Oscillator	2nd I.F.	1st I.F.	1st Det.	2nd R.F.	Rect.
						C-327	
						1st R.F.	

BRUNSWICK—Model 5NO—
Line Voltage 110—Volume Control Minimum

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st AF DET ETC	TUNE OUT		REMARKS: PLACE IN ORDER OF SET							
			A VOLTS	D VOLTS	A VOLTS	D VOLTS	C VOLTS	OSCILLATOR PLATE VOLTS	PLATE VOLTS	PLATE VOLTS	PLATE VOLTS	
227	Ant. Coupler		2.35	170	2.25	160	24	27	1.0	2.0	1.0	
227	1st R.F.		2.35	170	2.25	160	24	27	1.0	2.0	1.0	
227	1st Det.		2.35	94	2.25	80	10	0	1.0	2.0	1.0	
227	1st I.F.		2.35	170	2.25	160	24	27	1.0	5.0	2.0	
227	2nd I.F.		2.35	170	2.25	160	24	27	1.0	5.0	2.0	
227	Oscillator		2.35	120	2.25	75	-	-	7.0	0	0.0	
227	2nd Det.		2.35	170	2.25	160	19	-	1.0	2.0	1.0	
171A	Power		5.5	160	5.0	150	30	-	20.0	22.0	2.0	
280	Rectifier		-	-	5.0	-	-	-	20.0	-	2.0	

MODEL 5 NO
SPU Chassis

BRUNSWICK RADIO CORP.

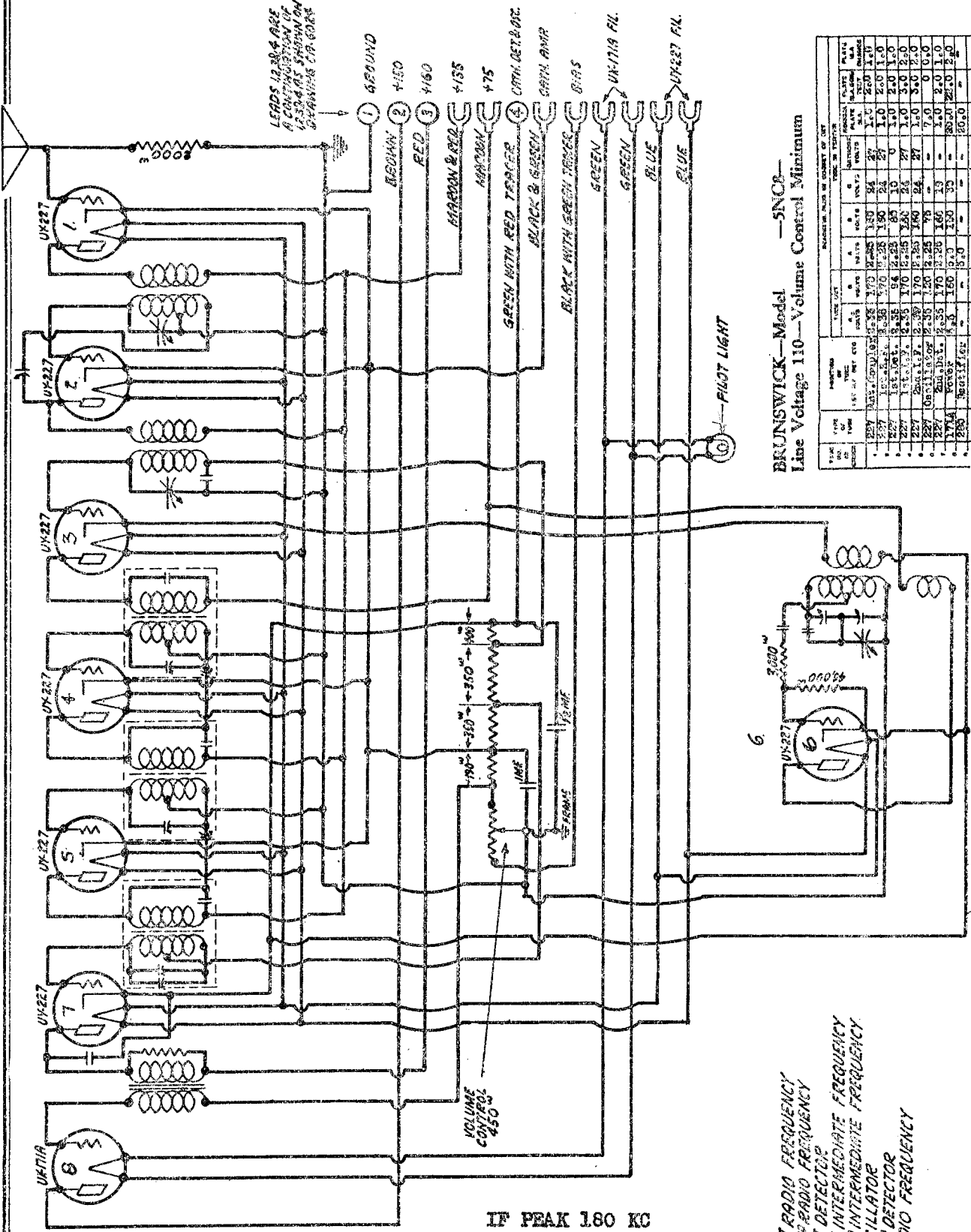


THE BRUNSWICK-BALKE-COLEMNER CO.
CHICAGO-ILLINOIS
TECHNICAL DIVISION
ACTUAL WIRING DIAGRAM OF S.P.U. X-530
(USED WITH SNO EQUIP.)
DESIGNED BY W. J. WELLS
DATE 8-17-28

- (A) RED
- (B) MAROON AND RED
- (C) MAROON
- (D) RED AND BLACK
- (E) GREEN
- (F) GREEN WITH RED TRACER
- (G) BLACK
- (H) BLACK WITH GREEN TRACER
- (I) BLACK WITH RED TRACER
- (J) BLACK AND BROWN
- (K) BLACK AND GREEN
- (L) BROWN
- (M) BLUE
- (N) YELLOW

BRUNSWICK RADIO CORP.

MODEL 5 NC8
Radio Schematic



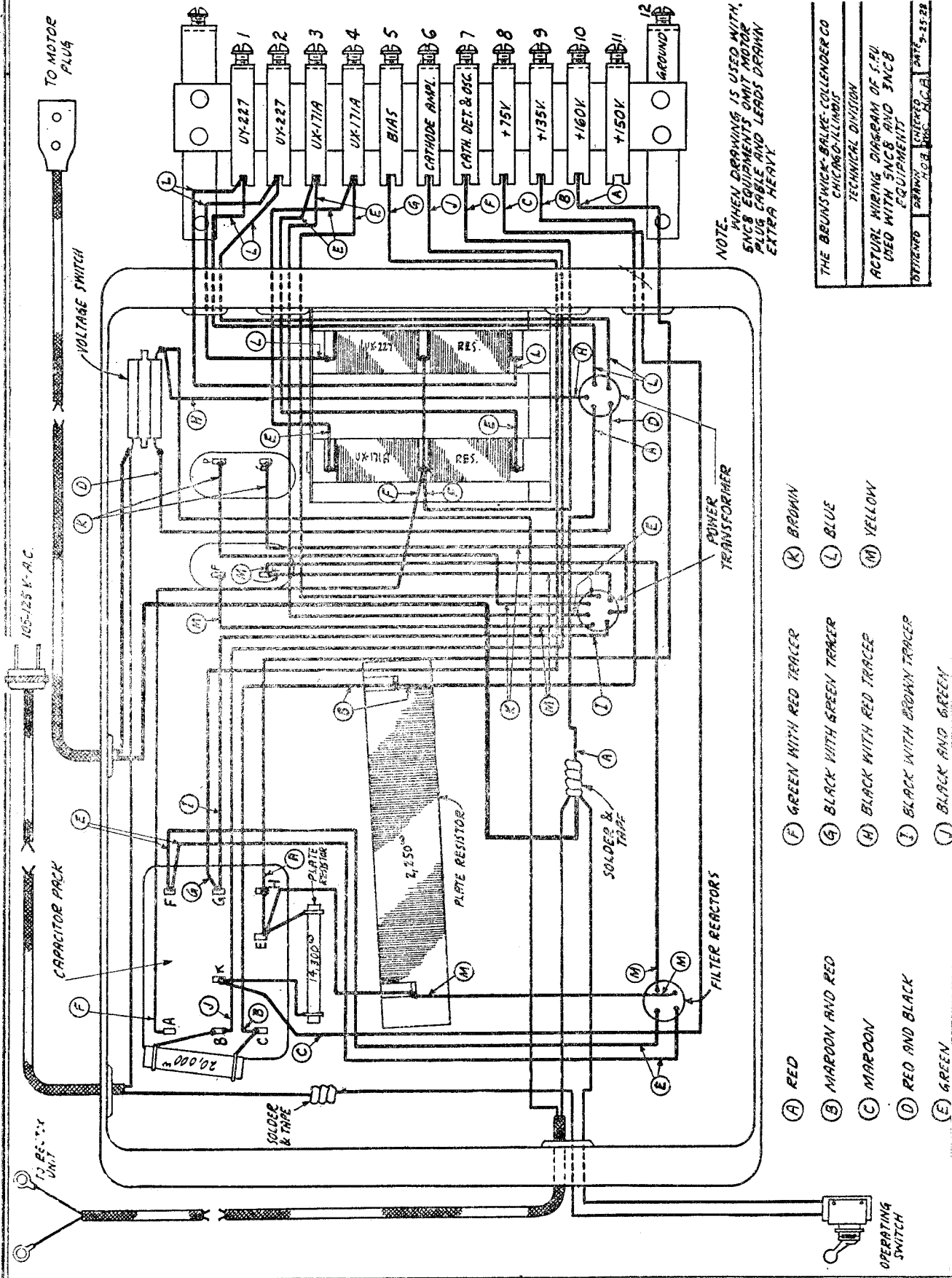
BRUNSWICK—Model 5—NC8—
Line Voltage 110—Volume Control Minimum

TUBE NO.	TYPE	RATING	WATTAGE	RESISTANCE IN OHMS		RESISTANCE IN OHMS		RESISTANCE IN OHMS		RESISTANCE IN OHMS		RESISTANCE IN OHMS		RESISTANCE IN OHMS		RESISTANCE IN OHMS	
				1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8
1	6X250	250-0-250	250	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	1U71A	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3	1U227	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
4	1U227	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	1U227	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6	6X250	250-0-250	250	100	100	100	100	100	100	100	100	100	100	100	100	100	100
7	1U227	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
8	1U71A	100-0-100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

- 1. 1st RADIO FREQUENCY
- 2. 2nd RADIO FREQUENCY
- 3. 1st DETECTOR
- 4. 1st INTERMEDIATE FREQUENCY
- 5. 2nd INTERMEDIATE FREQUENCY
- 6. OSCILLATOR
- 7. 2nd DETECTOR
- 8. AUDIO FREQUENCY

MODEL 3 NC8, 5 NC8
Audio Chassis

BRUNSWICK RADIO CORP.



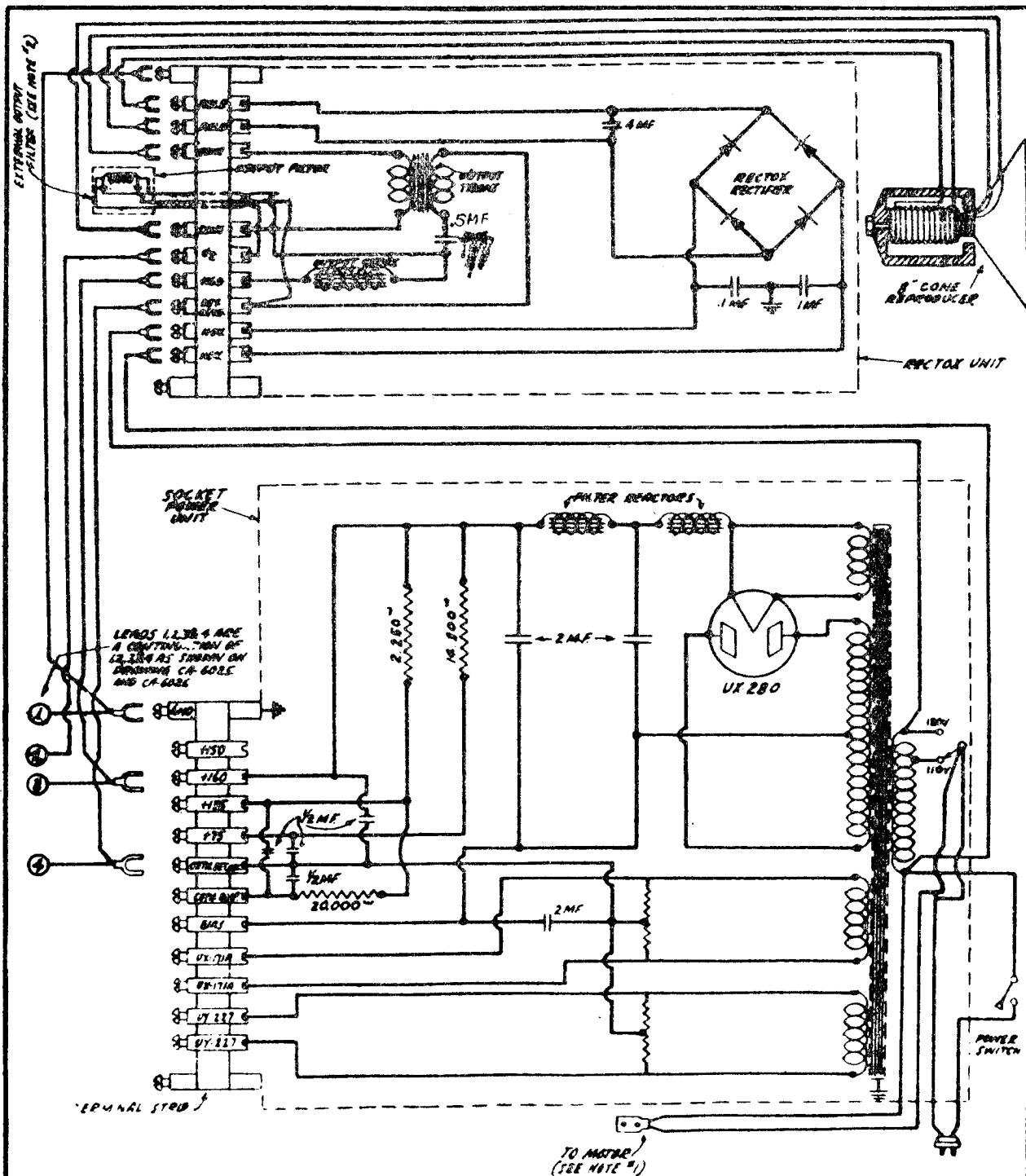
NOTE: WHEN DRAWING IS USED WITH SBC8 EQUIPMENT, OMIT MOTOR PLUG CABLE AND LEADS DRAWN EXTRA HEAVY.

THE BRUNSWICK-BALKE-COLLENDER CO
CHICAGO-ILLINOIS
TECHNICAL DIVISION
ACTUAL WIRING DIAGRAM OF S.B.U.
USED WITH SBC8 AND SBC8
EQUIPMENT
DRAWN BY H.B. DATE 9-15-22

- (A) RED
- (B) MAROON AND RED
- (C) MAROON
- (D) RED AND BLACK
- (E) GREEN
- (F) GREEN WITH RED TRACER
- (G) BLACK WITH GREEN TRACER
- (H) BLACK WITH RED TRACER
- (I) BLACK WITH BROWN TRACER
- (J) BLACK AND GREEN
- (K) BROWN
- (L) BLUE
- (M) YELLOW

BRUNSWICK RADIO CORP.

MODEL 3 NC8, 5 NC8
Audio Schematic

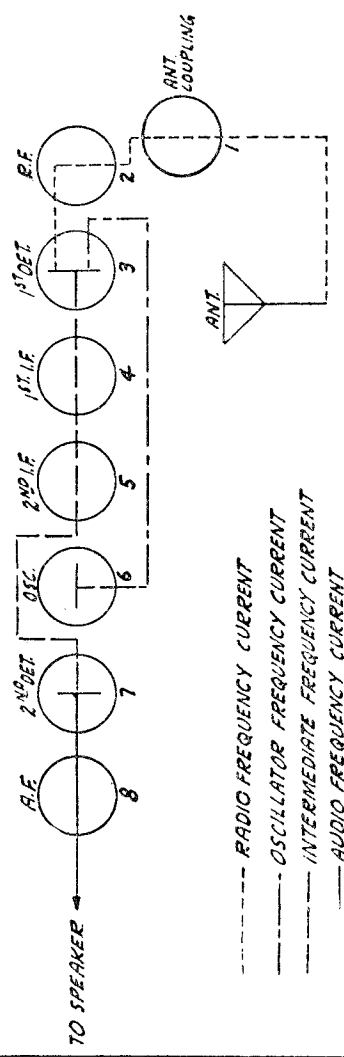
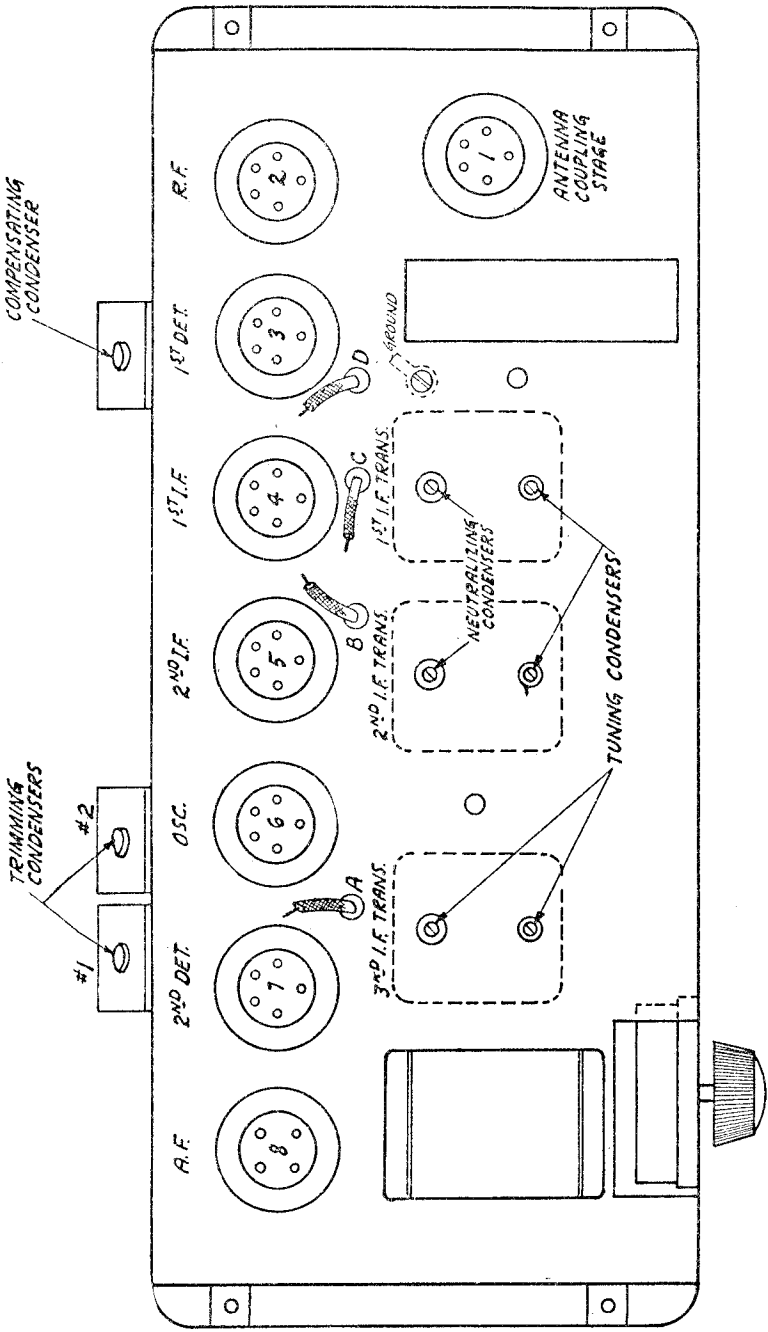


Model 3 NC8, 5 NC8 Audio Schematic

- NOTE:
1. MOTOR PLUG AND LEADS NOT USED WITH S. P.U. FOR 5NC8 EQUIPMENT
 2. EXTERNAL OUTPUT FILTER IS USED ONLY ON THE 3NC8 EQUIPMENTS

MODEL 5 NO. 5 NC8,
3 NC8
Trimmer Locations

BRUNSWICK RADIO CORP.



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO ILLINOIS.

TECHNICAL DEPARTMENT

LOCATION OF ADJUSTING CONDENSERS ON
5NO, 5NC8 & 3NC8 EQUIPMENTS

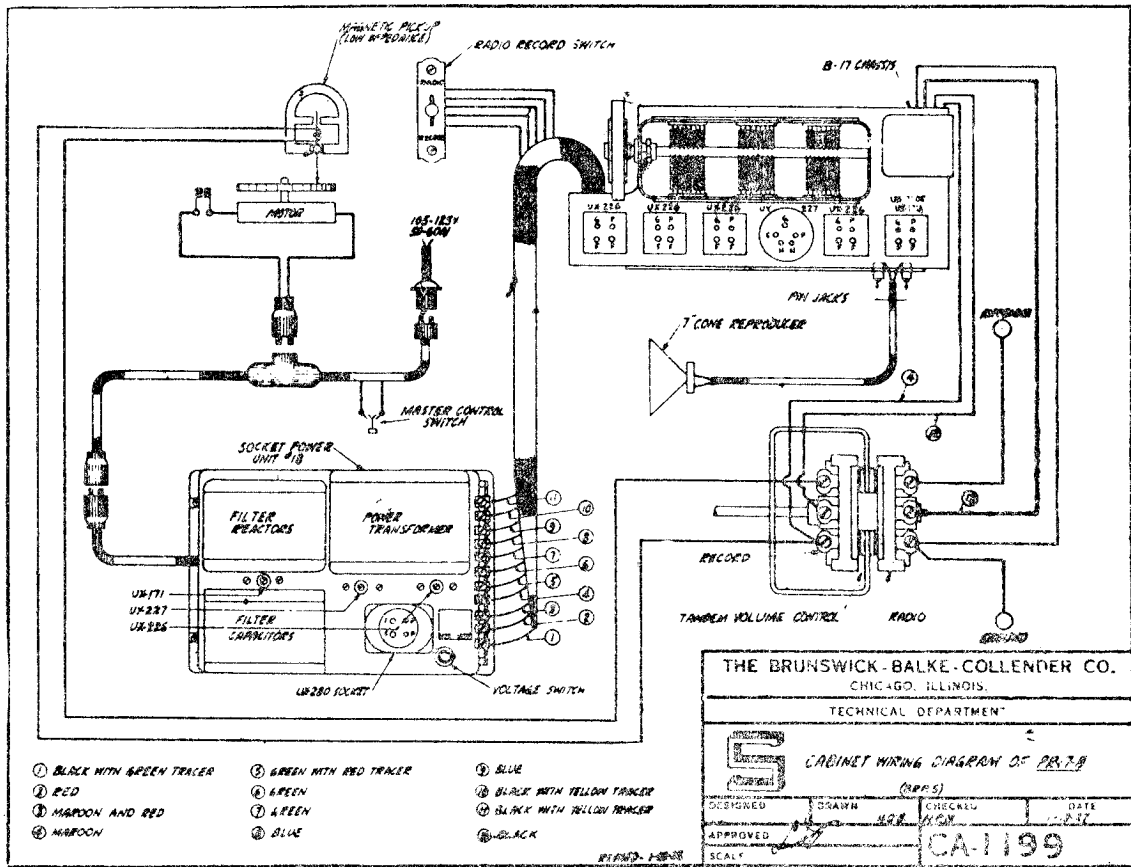
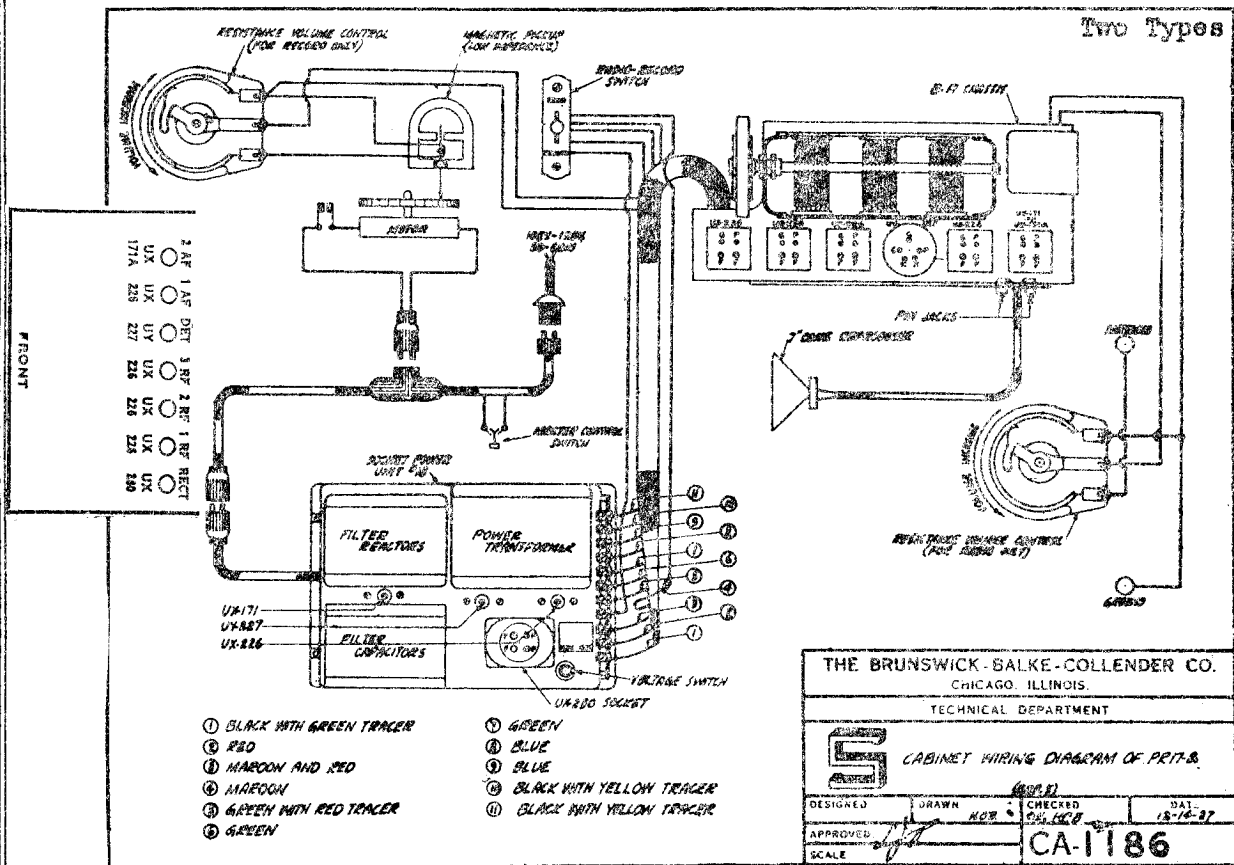
DESIGNED	DRAWN	CHECKED	DATE
	HOB	HOB	10-10-28
APPROVED:			CA-6039
SCALE			

REVISED 11-12-28
REVISED 10-22-28

BRUNSWICK RADIO CORPORATION

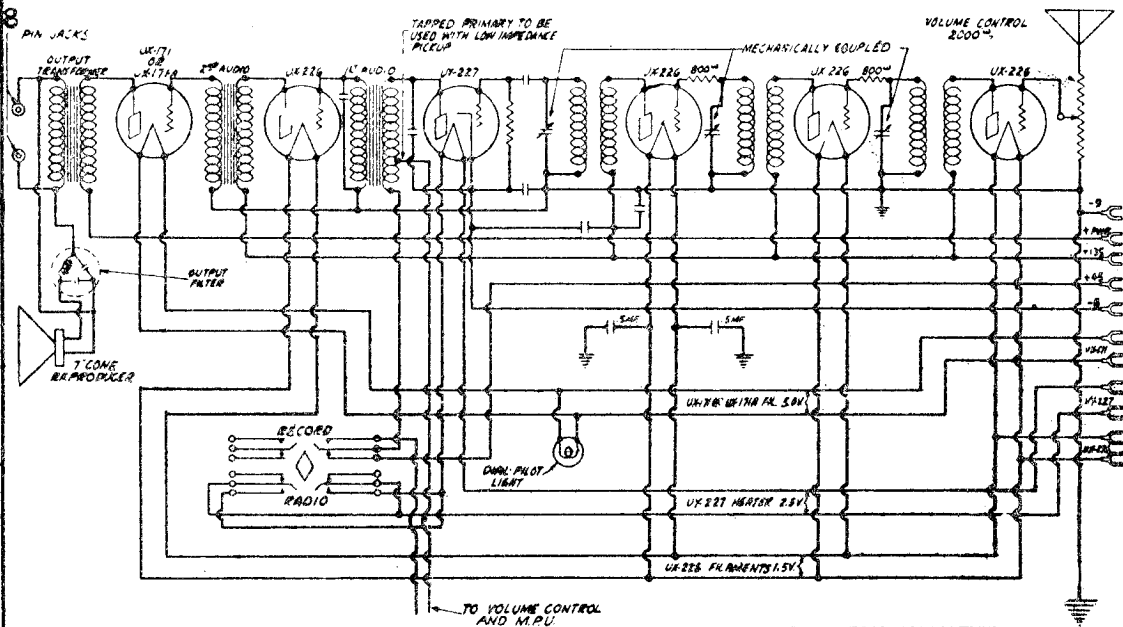
MODEL PR-17-8.
BPP-5

Two Types



MODEL B-17
MODEL SPU 18
For
PR-17-8

BRUNSWICK RADIO CORPORATION



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS.

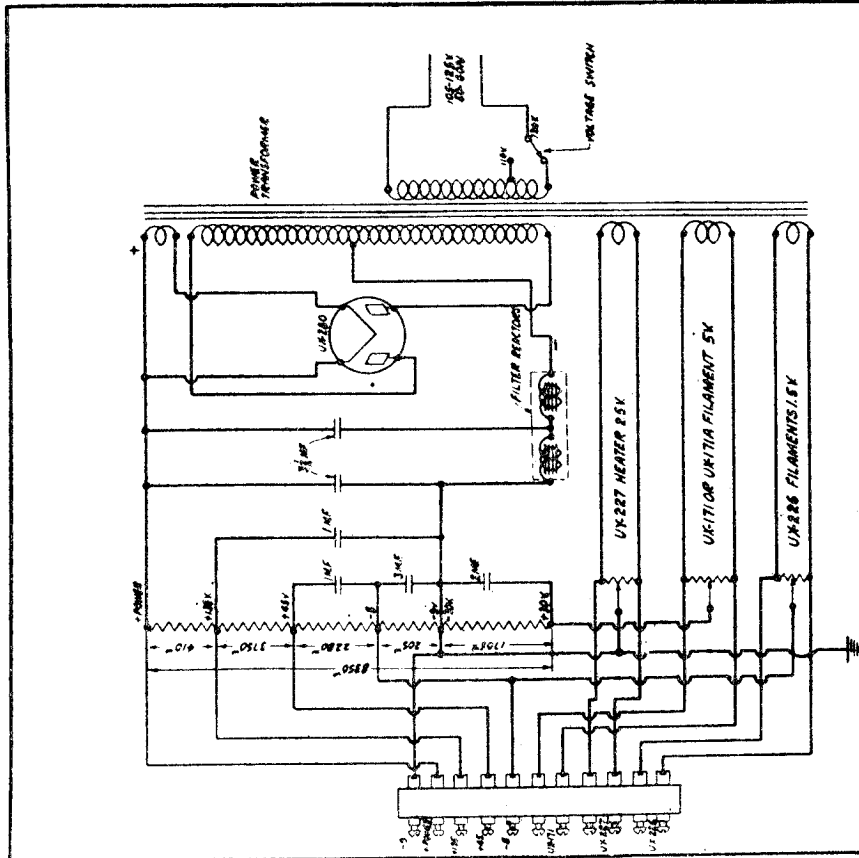
TECHNICAL DEPARTMENT

S SCHEMATIC WIRING DIAGRAM OF B-17 CHASSIS AS USED IN MODEL PR-17-8

DESIGNED: [Signature] DRAWN: MDE CHECKED: G.E. HCR DATE: 12-12-37

APPROVED: [Signature] CA-1190

SCALE:



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS.

TECHNICAL DEPARTMENT

S SCHEMATIC WIRING DIAGRAM OF S.P.U.-18 AS USED IN MODEL PR-17-8

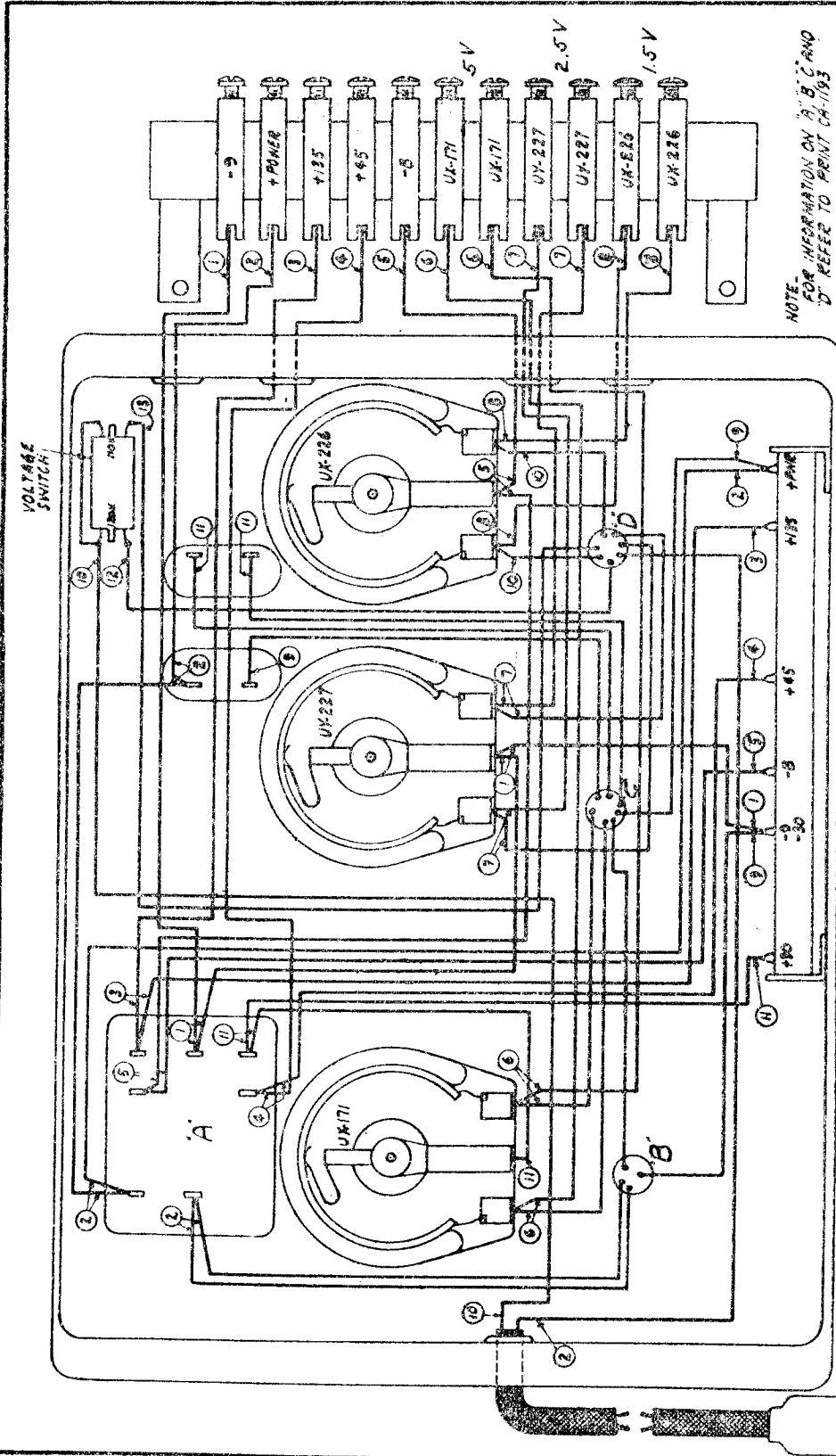
DESIGNED: [Signature] DRAWN: MDE CHECKED: G.E. HCR DATE: 12-12-37

APPROVED: [Signature] CA-1191

SCALE:

BRUNSWICK RADIO CORPORATION

MODEL SPU-18
Chassis for PR-17



NOTE - FOR INFORMATION ON A, B, C AND D REFER TO PRINT CA-193

THE BRUNSWICK-BALKE-COLENDER CO.
CHICAGO, ILLINOIS
TECHNICAL DEPARTMENT

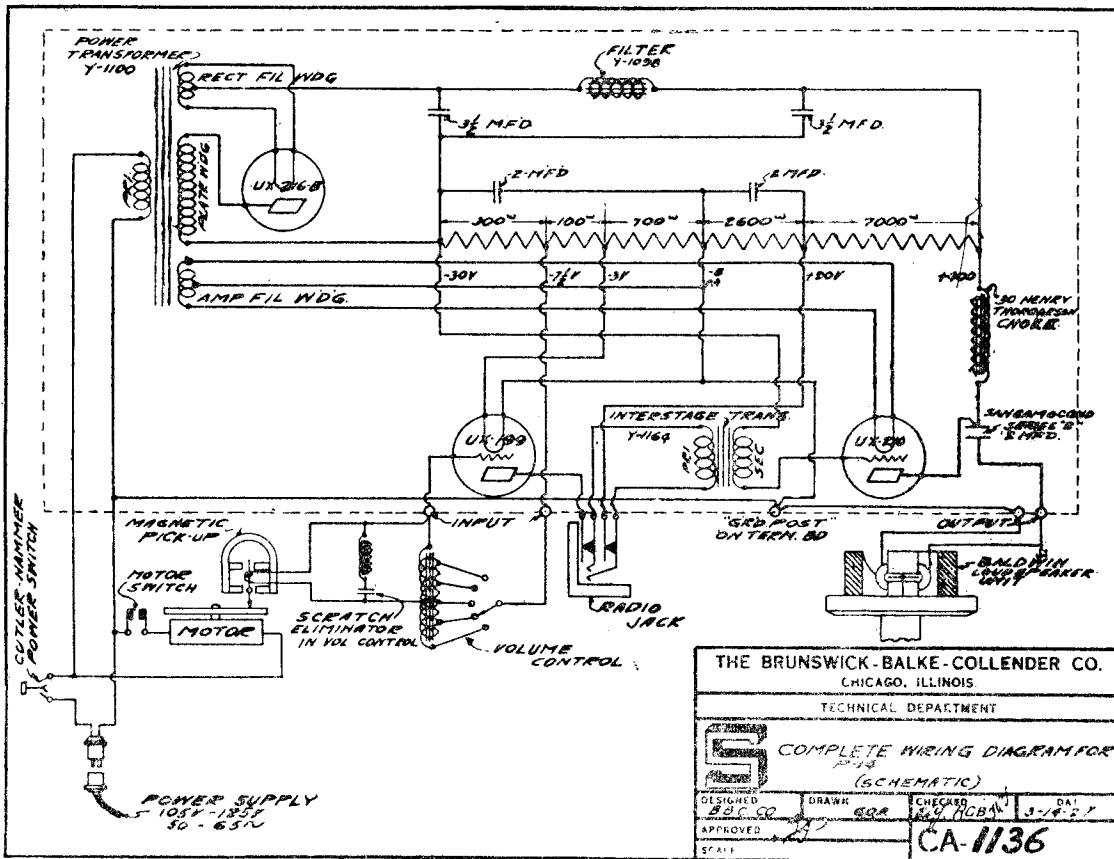
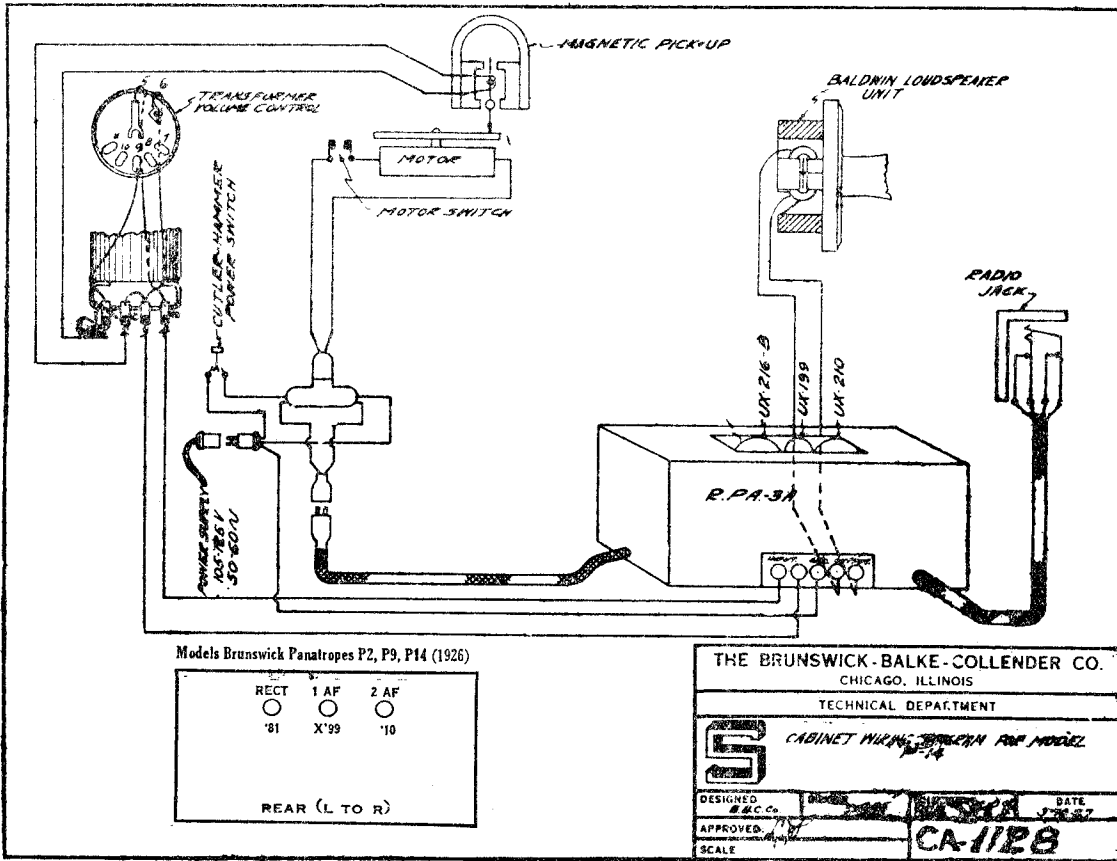
DESIGNED BY [Signature]
CHECKED BY [Signature]
DATE 12-14-42

CA-1192

- ① BLACK WITH GREEN TRACER
- ② RED
- ③ MAROON AND RED
- ④ MAROON
- ⑤ GREEN WITH RED TRACER
- ⑥ GREEN
- ⑦ BLUE
- ⑧ BLACK WITH YELLOW TRACER
- ⑨ YELLOW
- ⑩ BLACK
- ⑪ BROWN
- ⑫ RED AND BLACK
- ⑬ BLACK WITH RED TRACER
- ⑭ BLACK WITH BROWN TRACER

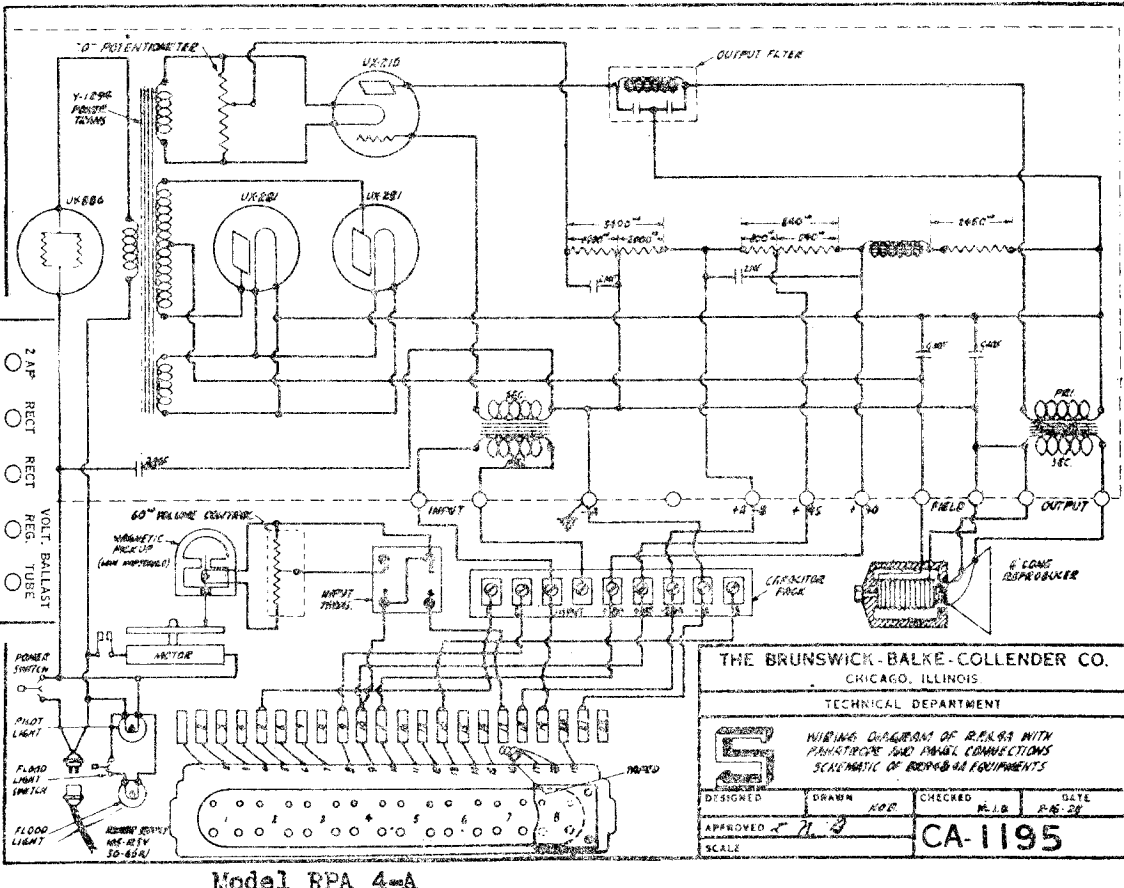
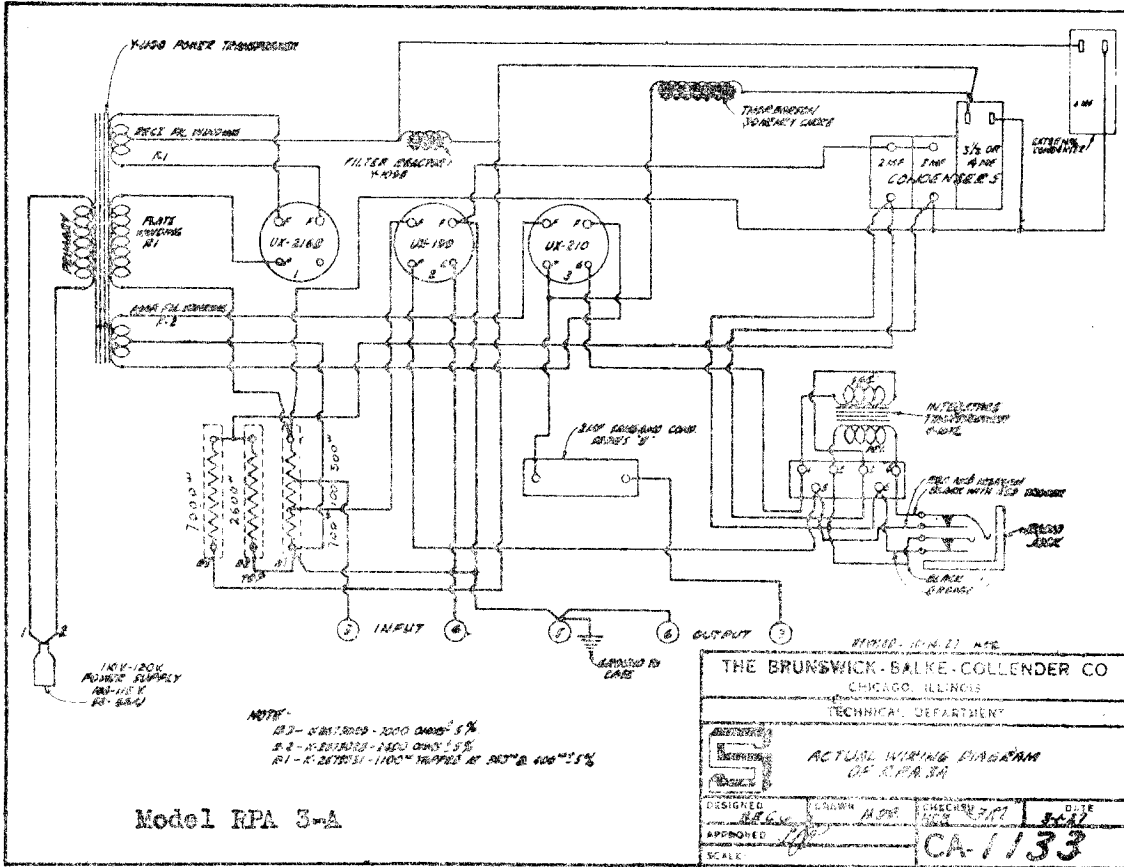
MODEL P-14

BRUNSWICK RADIO CORPORATION



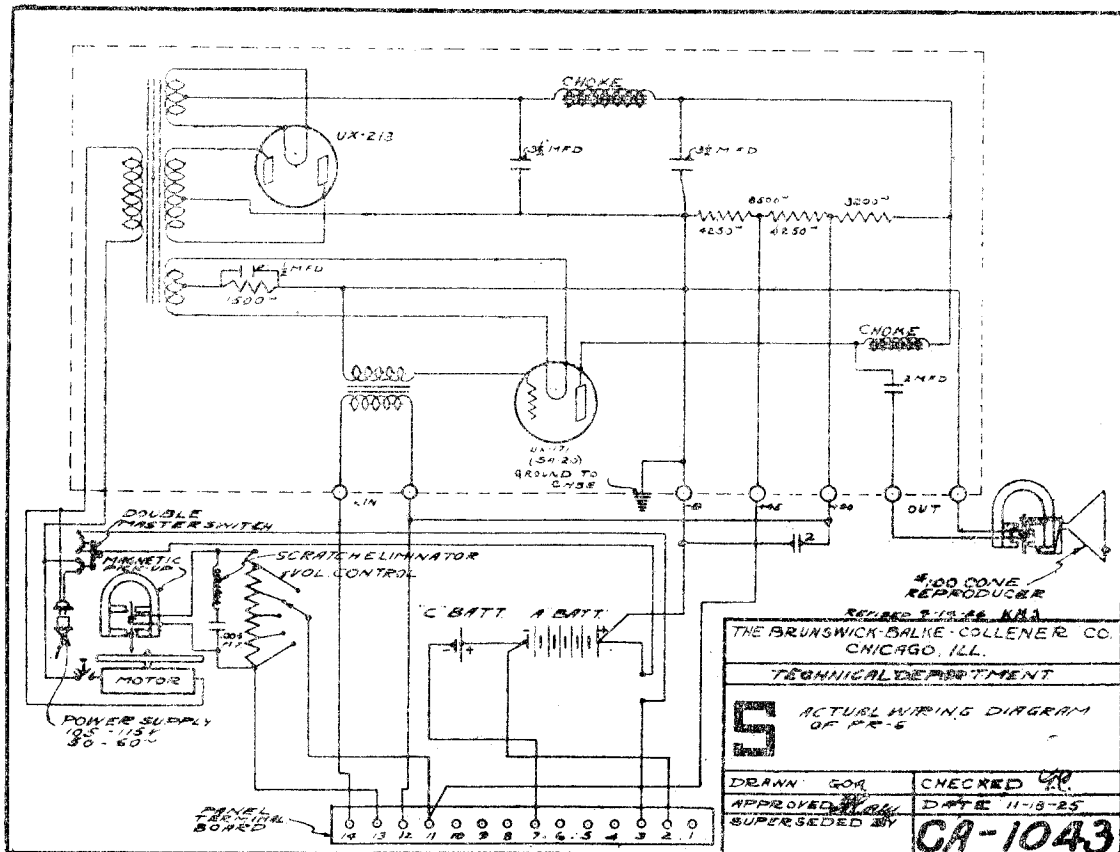
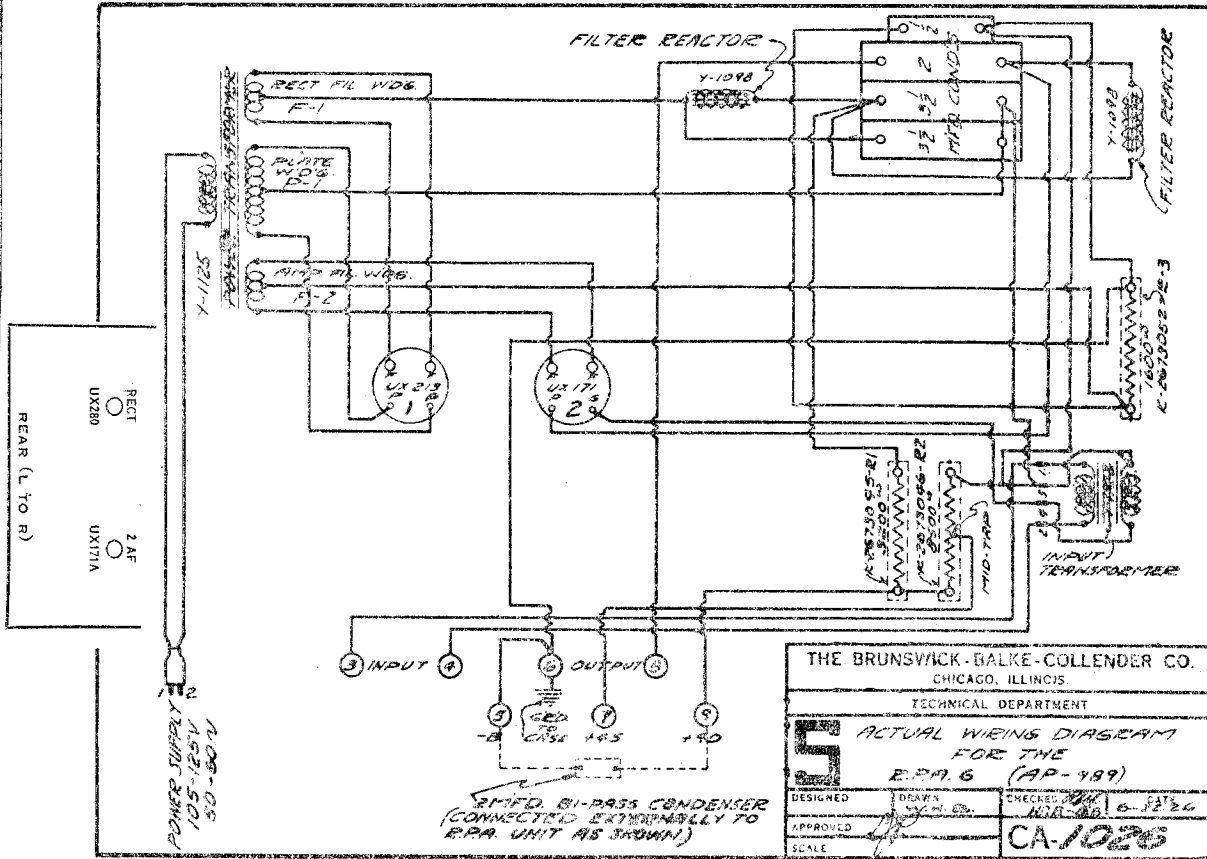
BRUNSWICK RADIO CORPORATION

MODEL RPA-3A
MODEL RPA-4A



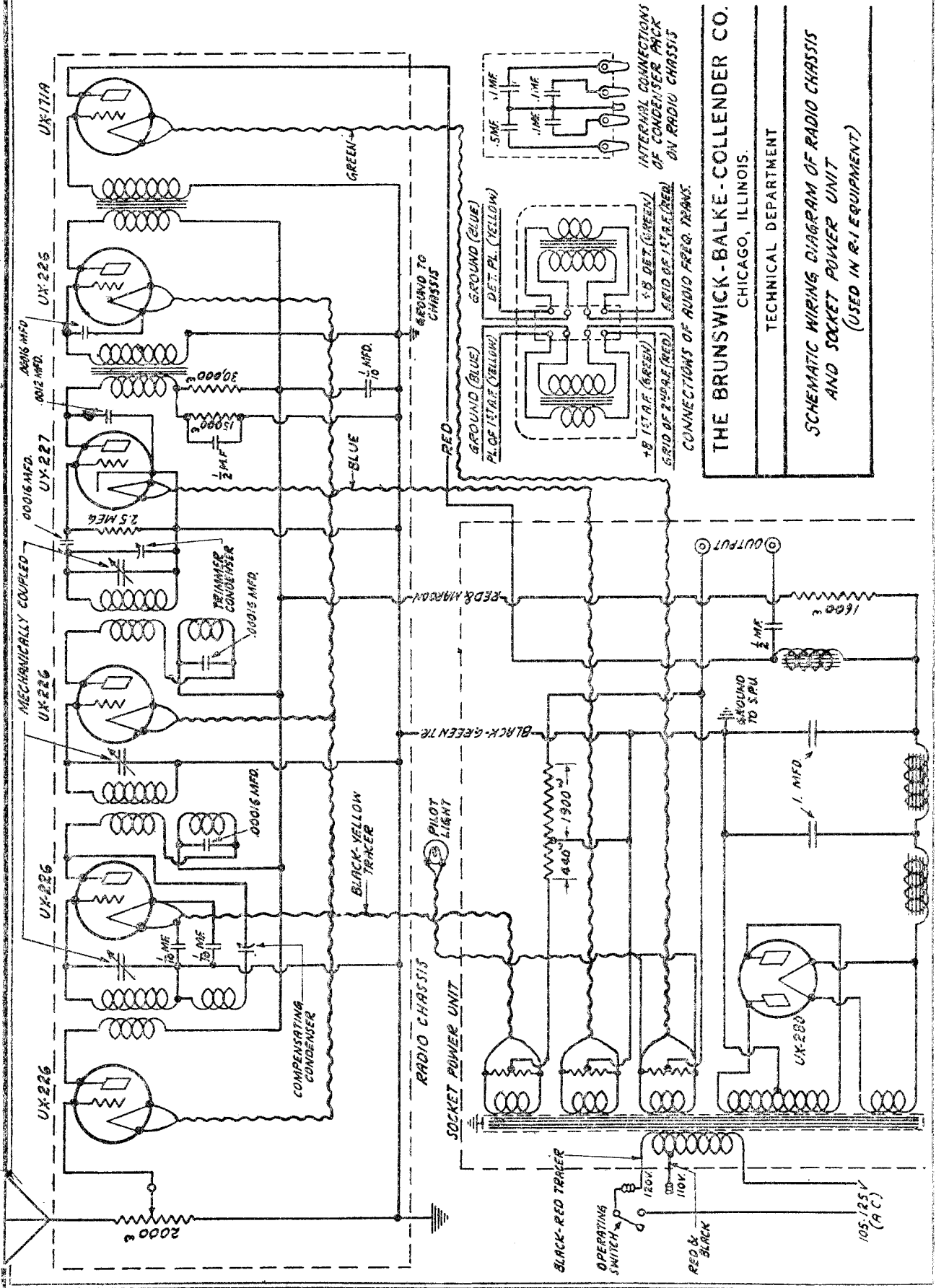
MODEL RPA-6
 MODEL PR-6

BRUNSWICK RADIO CORPORATION



BRUNSWICK RADIO CORPORATION

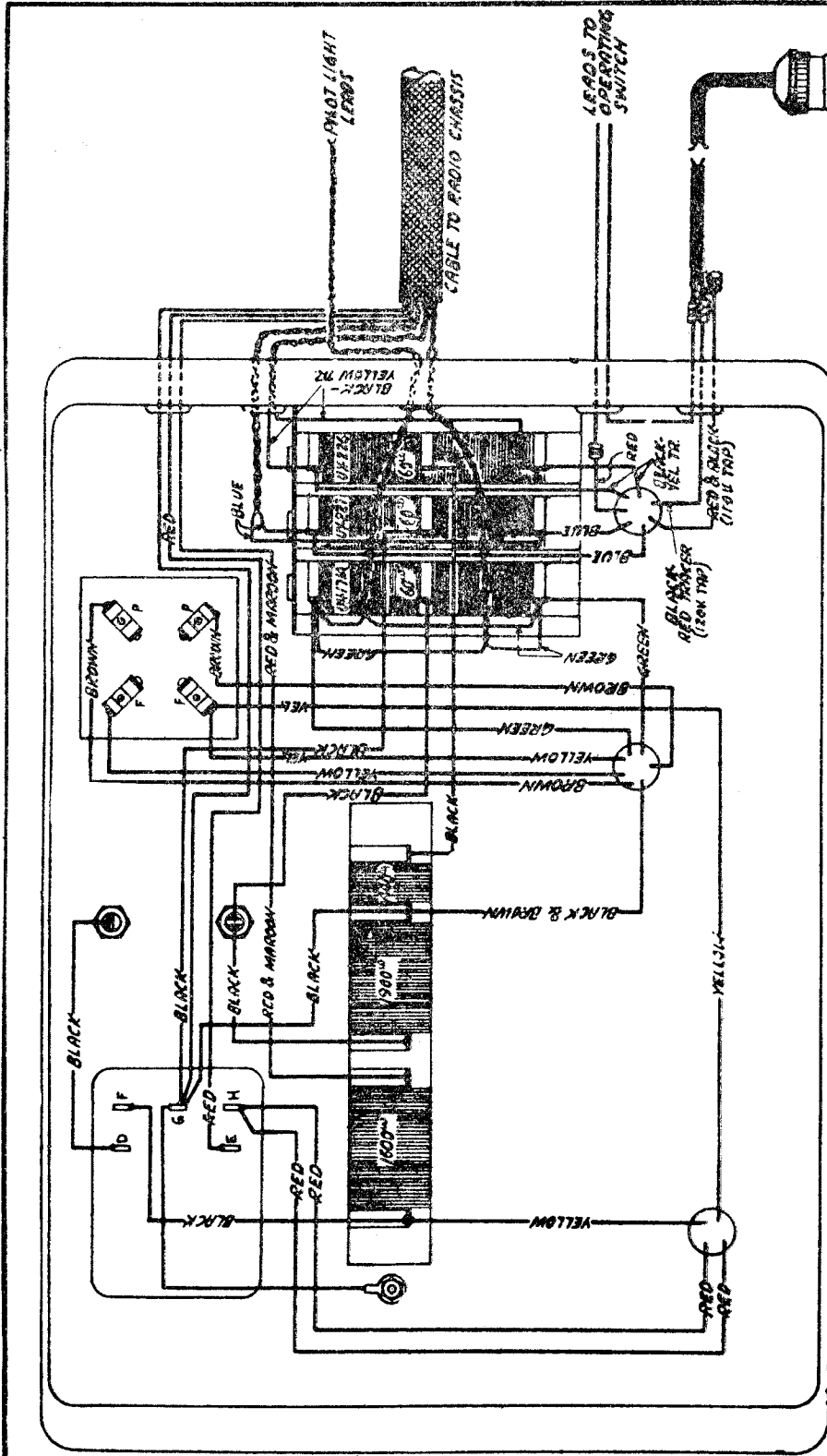
MODEL R-1



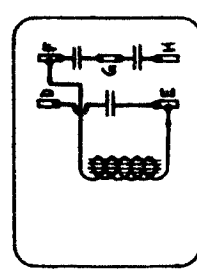
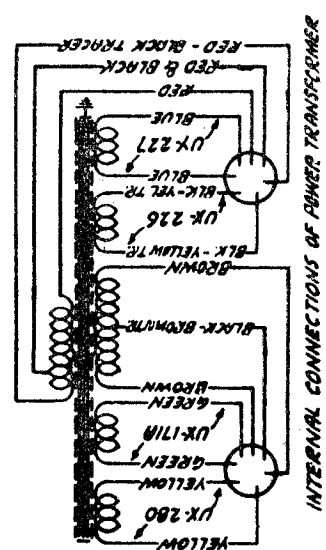
THE BRUNSWICK-BALKE-COLELDER CO.
CHICAGO, ILLINOIS.
TECHNICAL DEPARTMENT
SCHEMATIC WIRING DIAGRAM OF RADIO CHASSIS
AND SOCKET POWER UNIT
(USED IN R-1 EQUIPMENT)

**MODEL R-1
Chassis**

BRUNSWICK RADIO CORPORATION



THE BRUNSWICK-BALKE-COLLENDER CO. CHICAGO, ILLINOIS.	
TECHNICAL DEPARTMENT	
ACTUAL WIRING DIAGRAM OF SOCKET POWER UNIT (USED IN R.1 EQUIPMENT)	
DESIGNED	DATE
DRAWN	1-31-29
CHECKED	
APPROVED: <i>Red</i>	
CA-6060	
SCALE:	



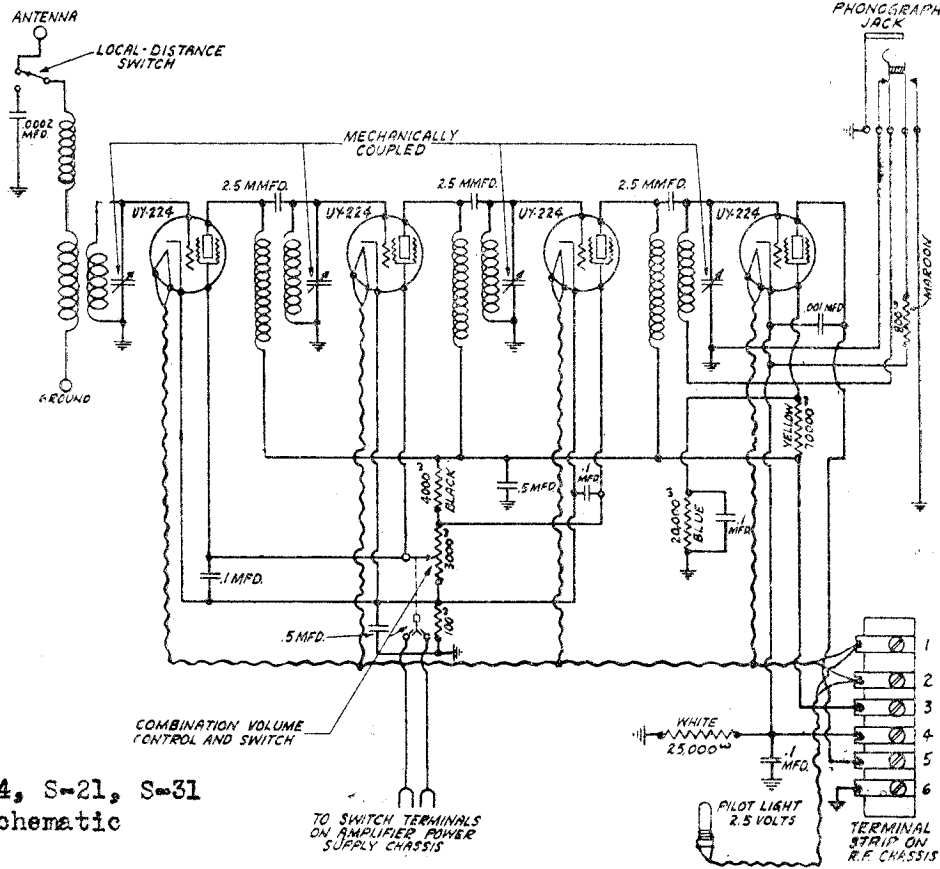
INTERNAL CONNECTIONS OF POWER TRANSFORMER

INTERNAL CONNECTIONS OF CONDENSER BANK

MODEL S-14, S-21, S-31, S-81, S-82 AC Radio Schematic

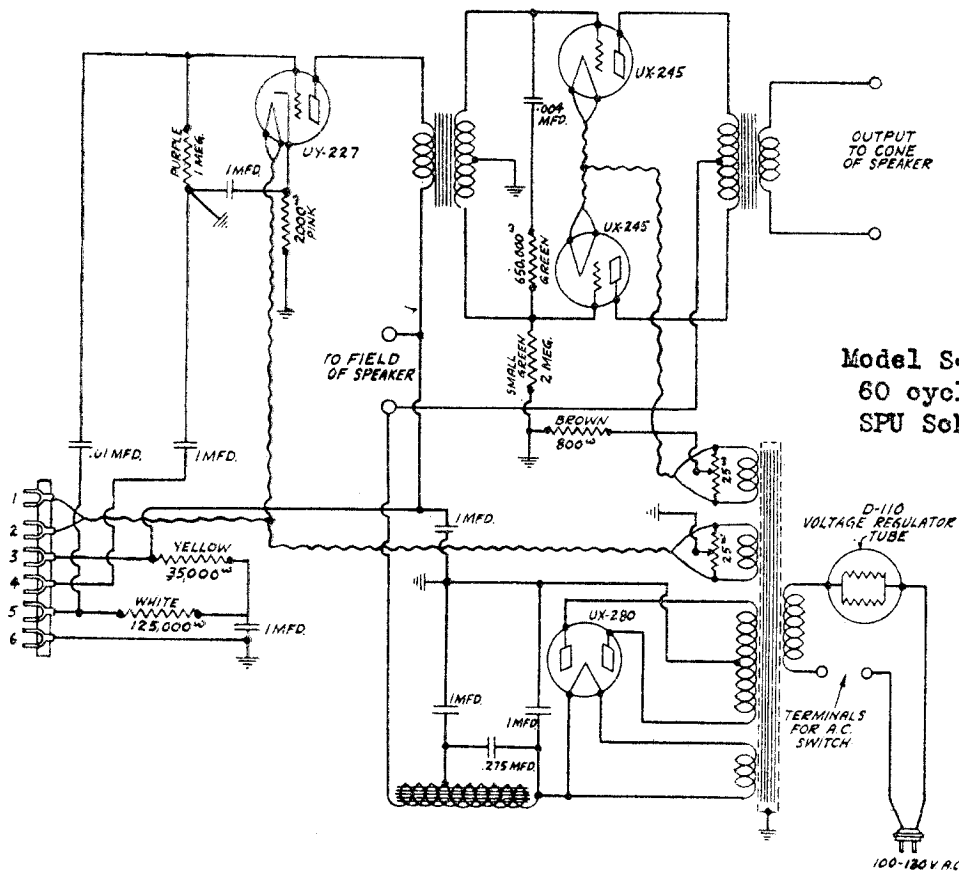
BRUNSWICK RADIO CORPORATION

MODEL S-14, S21 S-81 AF and SPU Schematic



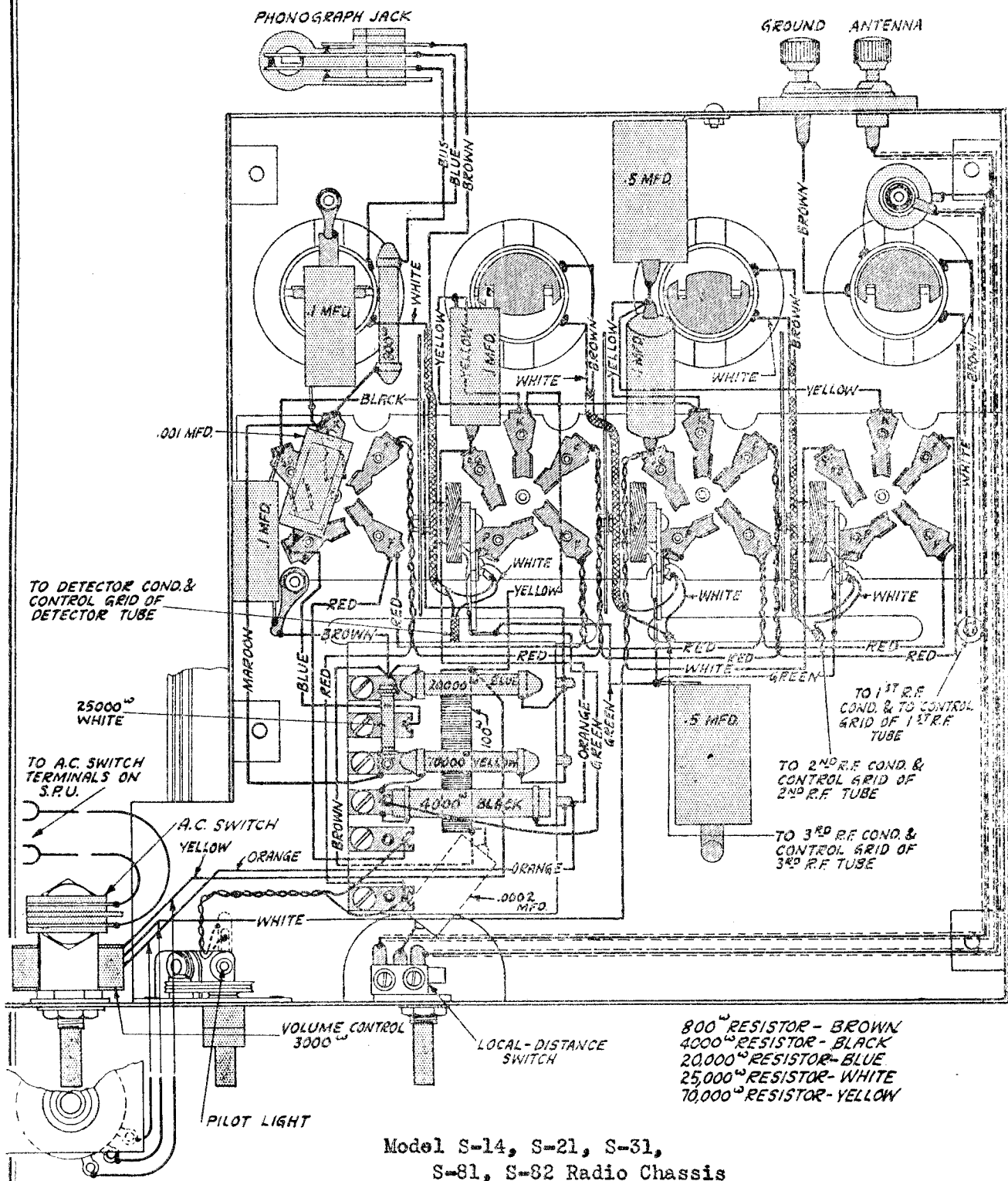
Model S-14, S-21, S-31 Radio Schematic

Model S-14, S-21 60 cycle AF and SPU Schematic



MODEL S-14, S-21, S-31
S-81, S-82 Radio
Chassis

BRUNSWICK RADIO CORPORATION

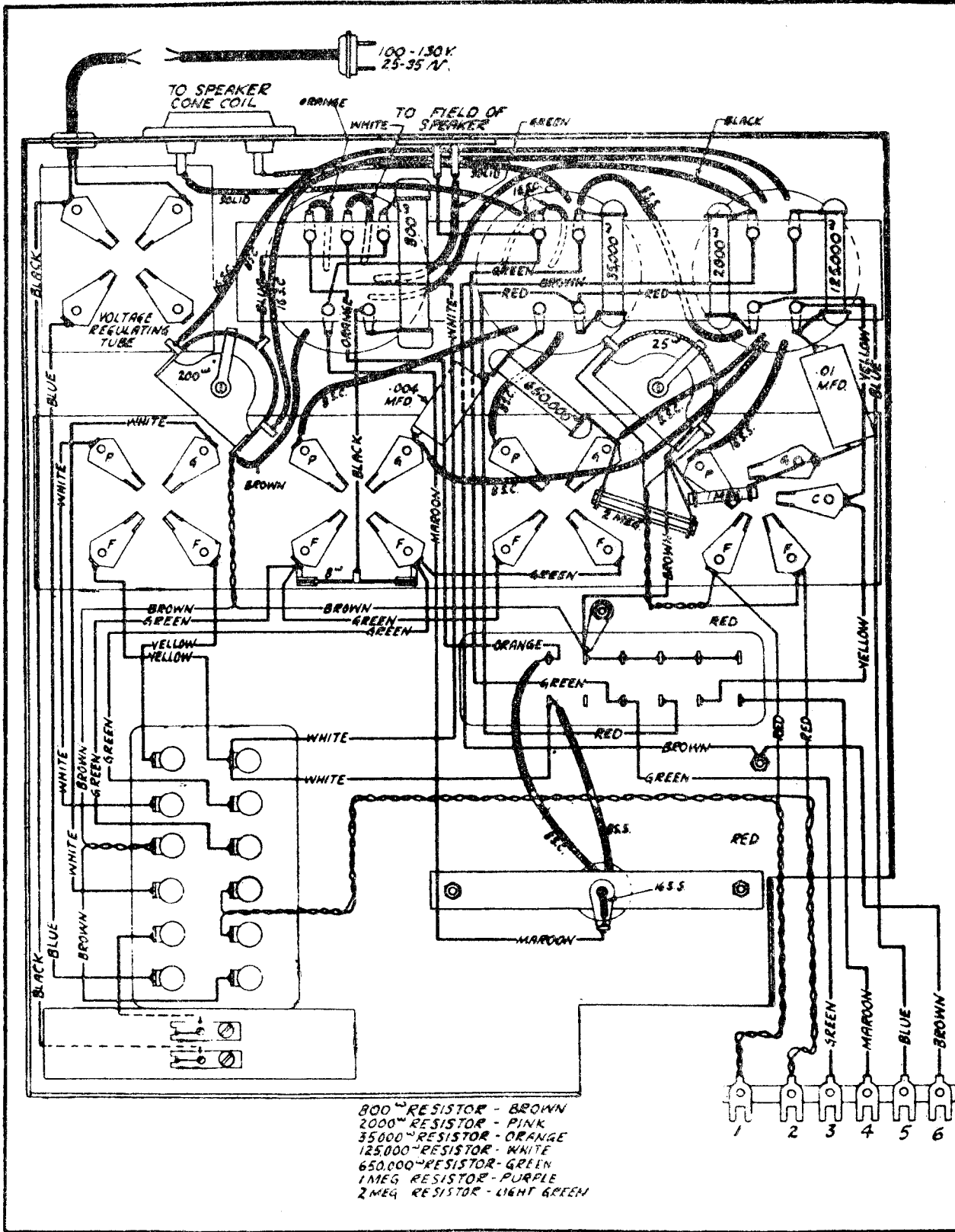


- 800 Ω RESISTOR - BROWN
- 4000 Ω RESISTOR - BLACK
- 20,000 Ω RESISTOR - BLUE
- 25,000 Ω RESISTOR - WHITE
- 70,000 Ω RESISTOR - YELLOW

Model S-14, S-21, S-31,
S-81, S-82 Radio Chassis

BRUNSWICK RADIO CORPORATION

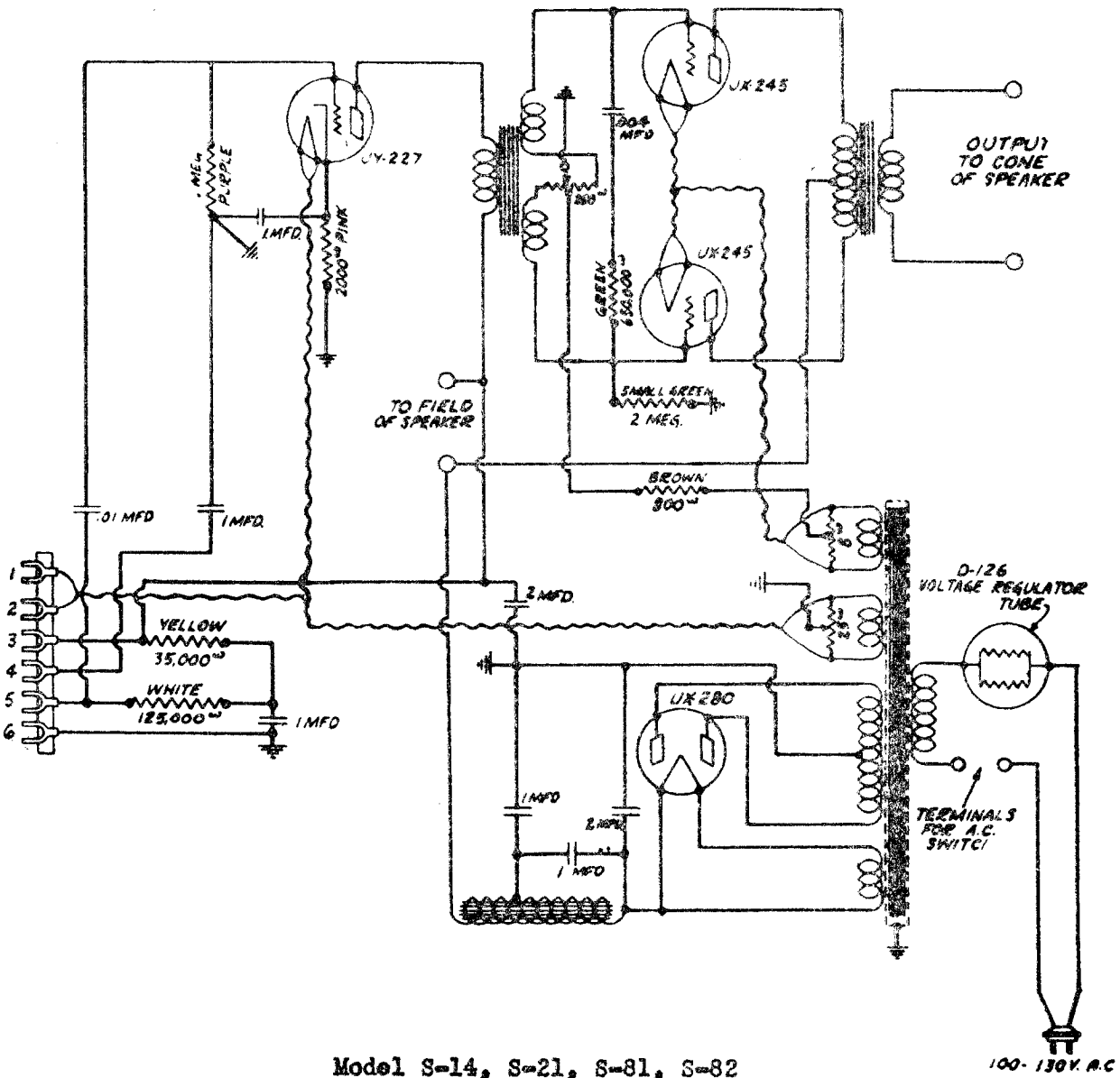
MODEL S-14, S-21,
S-81, S-82
25 cycle AF
Chassis



Model S-14, S-21, S-81, S-82 AF Chassis
25 cycle

MODEL S-14, S-21
S-81, S-82 AC
25 cycle AF
Schematic

BRUNSWICK RADIO CORPORATION

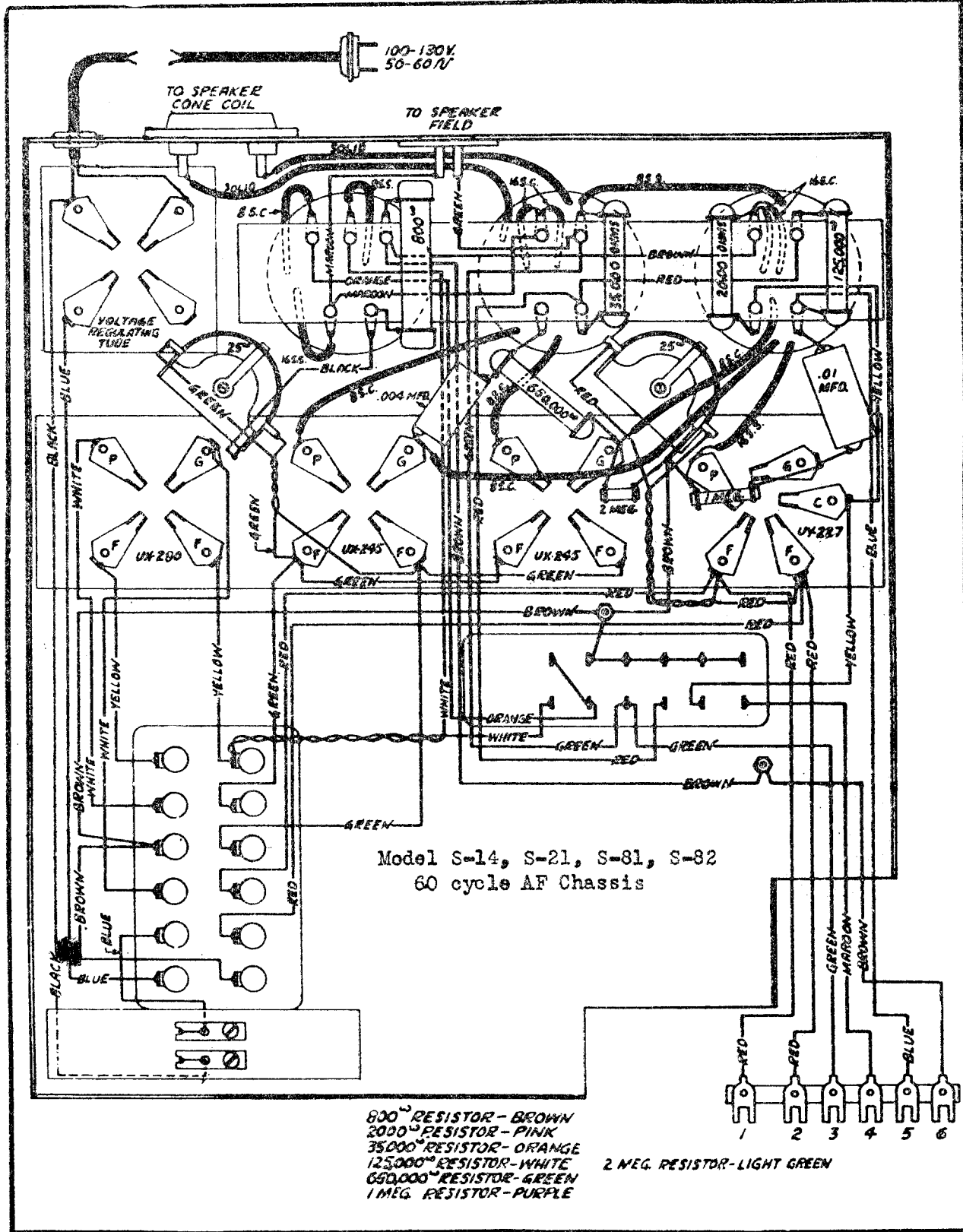


Model S-14, S-21, S-81, S-82
25 cycle AF Schematic

100-130V. AC

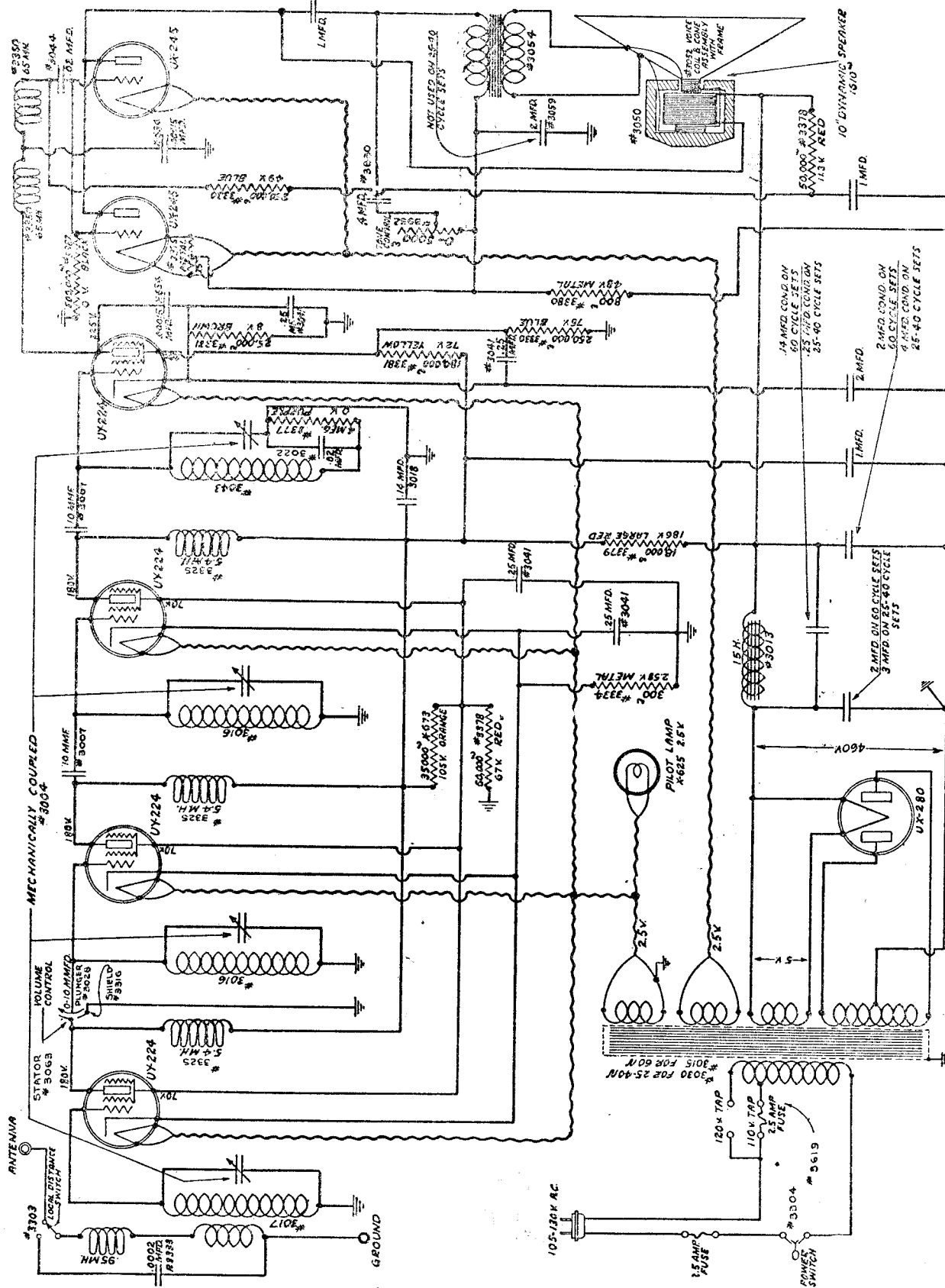
BRUNSWICK RADIO CORPORATION

MODEL S-14, S-21
S-81, S-82
60 cycle AF
Chassis



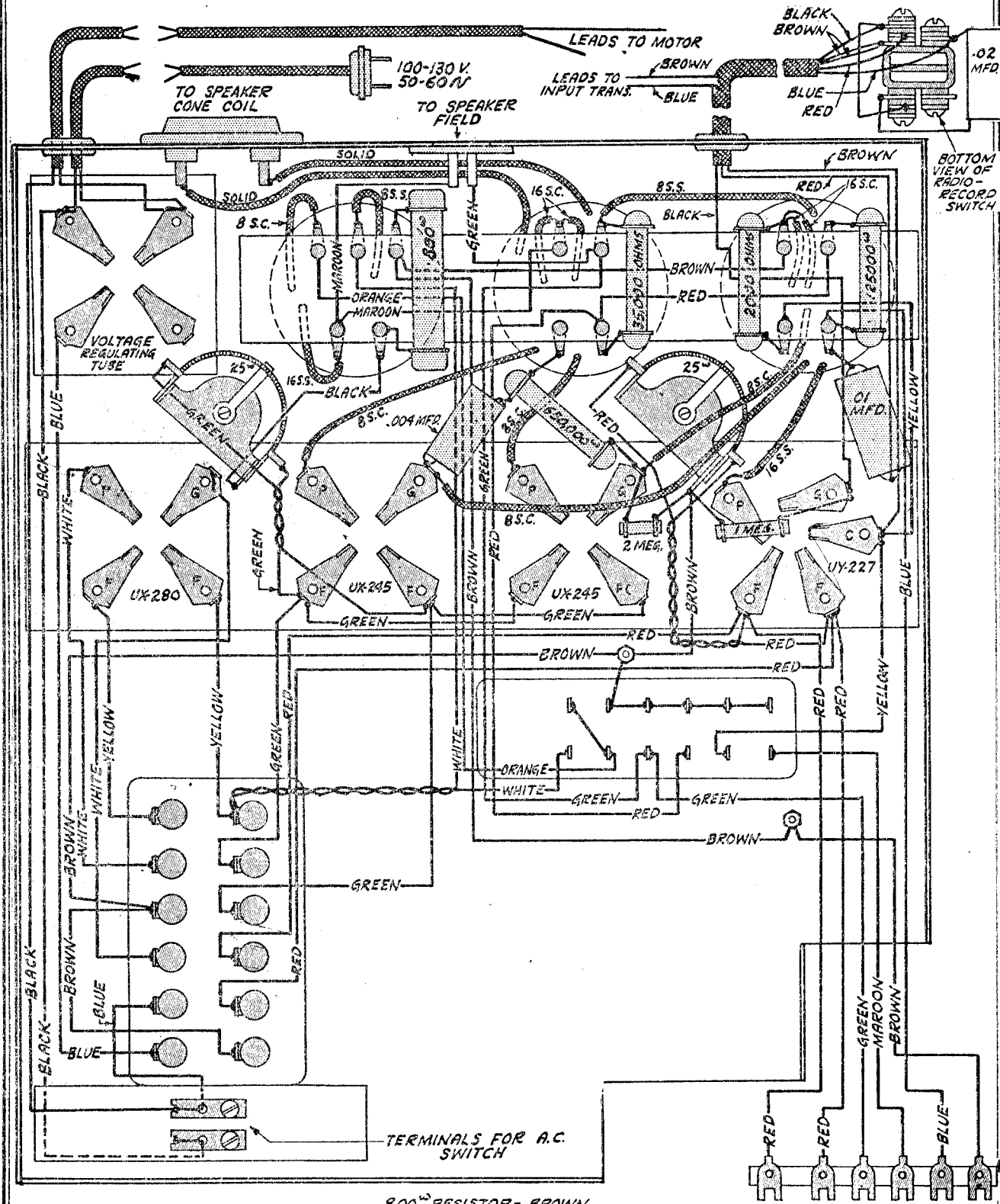
MODEL 15, 22 AC
Schematic
Also 32 and 42 AC

BRUNSWICK RADIO CORPORATION



BRUNSWICK RADIO CORPORATION

MODEL S-31
60 cycle AF
Chassis

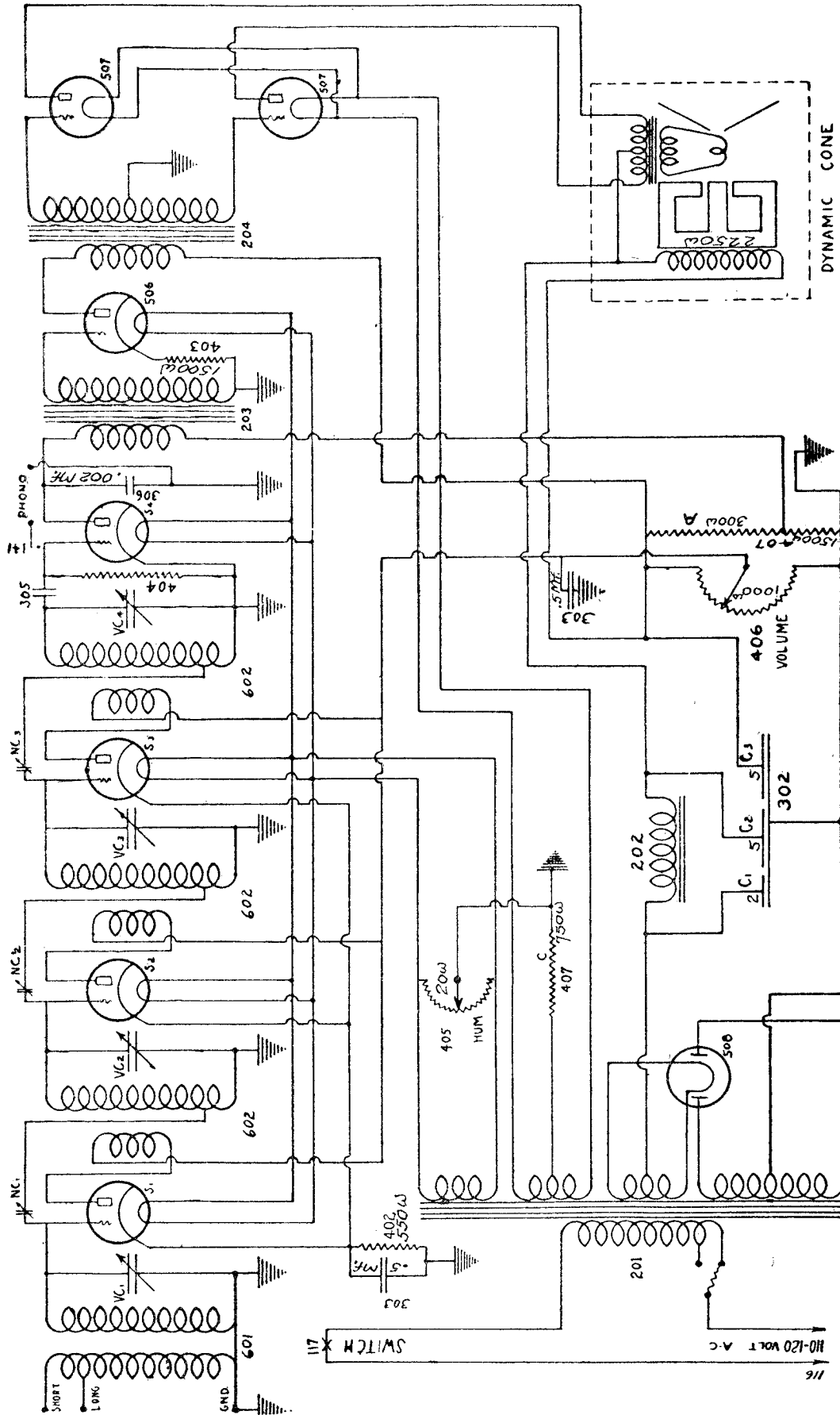


- *8 S.C. = *8 STRAND COPPER WIRE
- *8 S.S. = *8 STRAND SILVER WIRE
- *16 S.C. = *16 STRAND COPPER WIRE
- *16 S.S. = *16 STRAND SILVER WIRE

- 800^Ω RESISTOR - BROWN
- 2000^Ω RESISTOR - PINK
- 35000^Ω RESISTOR - ORANGE
- 125,000^Ω RESISTOR - WHITE
- 650,000^Ω RESISTOR - GREEN
- 1 MEG. RESISTOR - PURPLE
- 2 MEG. RESISTOR - GREEN

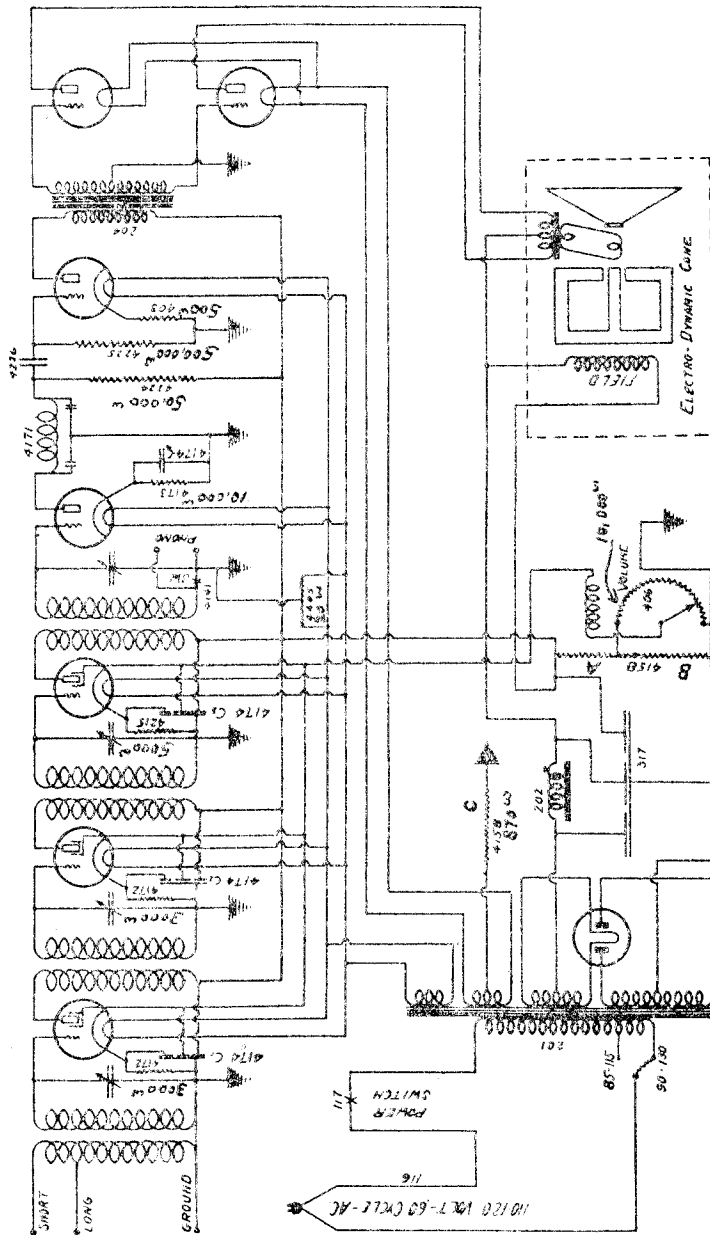
BUSH & LANE PIANO COMPANY

MODEL 10 Schematic



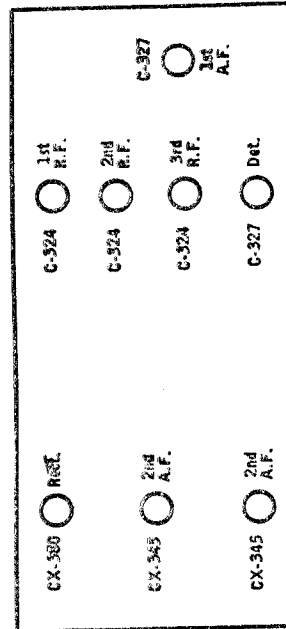
MODEL 12
Schematic and
Data

BUSH & LANE PIANO COMPANY



4158—Voltage Divider Resistor 5750 Ohms, Total.

No.12 Screen Grid

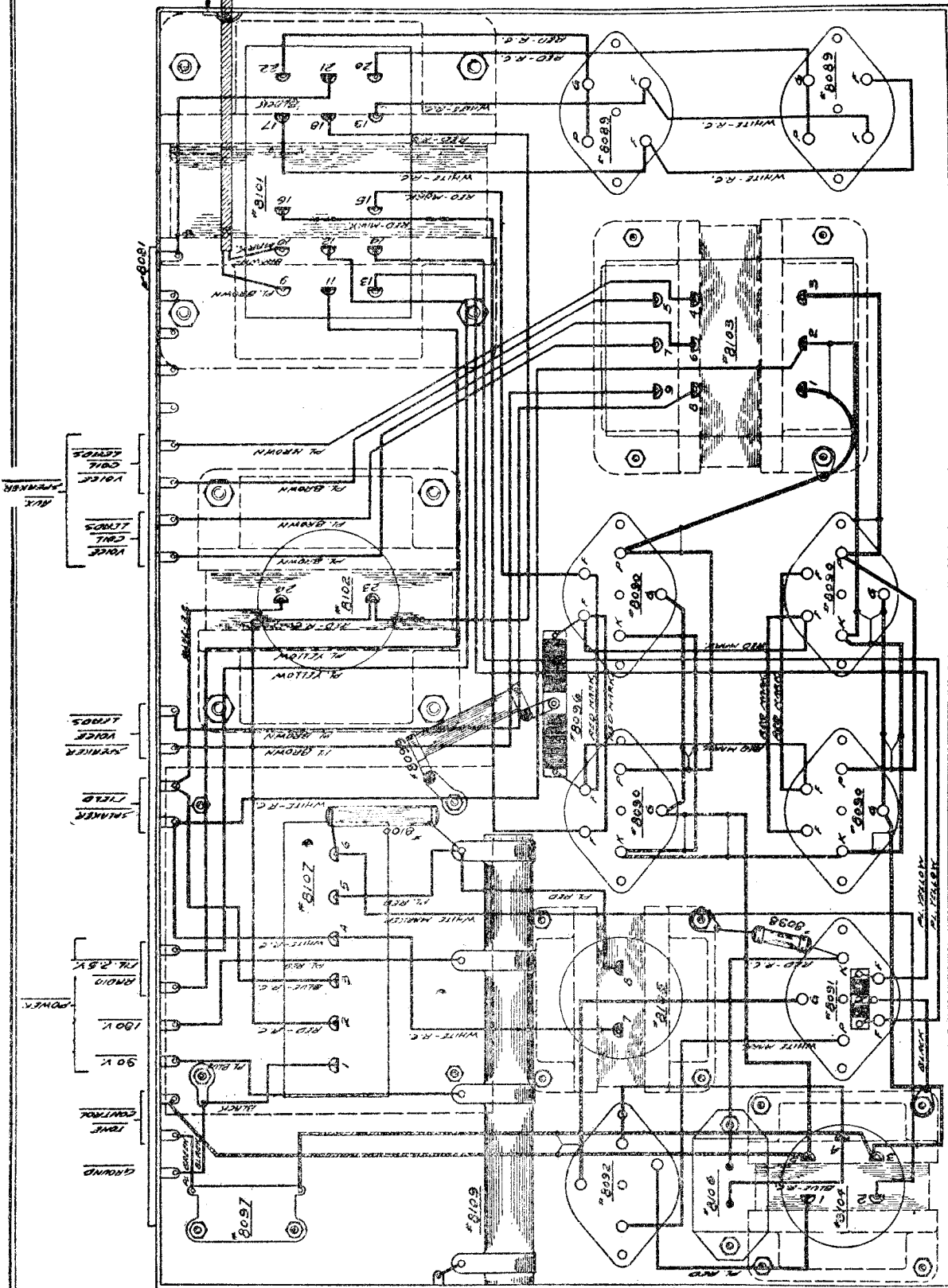


Line Voltage 112—Set on 120 Volt Tap

TUBE NO.	TYPE OF TUBE	POSITION OF TUBE IN SET	TUBE OUT			TUBE IN TESTER			VOLTAGE	CURRENT		
			A	B	C	A	B	C				
224	6X4	1st R.F.	2.45	1.85	2.35	1.70	3.15	3	1	4	3	65
224	6X4	2nd R.F.	2.45	1.85	2.35	1.70	3.10	3	1.0	4	3	65
224	6X4	3rd R.F.	2.45	1.85	2.35	1.70	3.10	3	1.5	4	3	65
227	6X6	1st A.F.	2.45	1.50	2.35	1.50	18.0	10	7.4	9	1.5	-
227	6X6	2nd A.F.	2.45	1.10	2.35	1.00	10.0	10	7.4	9	1.5	-
227	6X6	DET.	2.45	2.55	2.35	2.50	45	-	26	30	4	-
227	6X6	1st A.F.	2.45	2.55	2.35	2.50	45	-	26	30	4	-
227	6X6	2nd A.F.	2.45	2.55	2.35	2.50	45	-	26	30	4	-
227	6X6	DET.	2.45	2.55	2.35	2.50	45	-	26	30	4	-

MODEL 400 Series
"PZ" Amplifier
Chassis

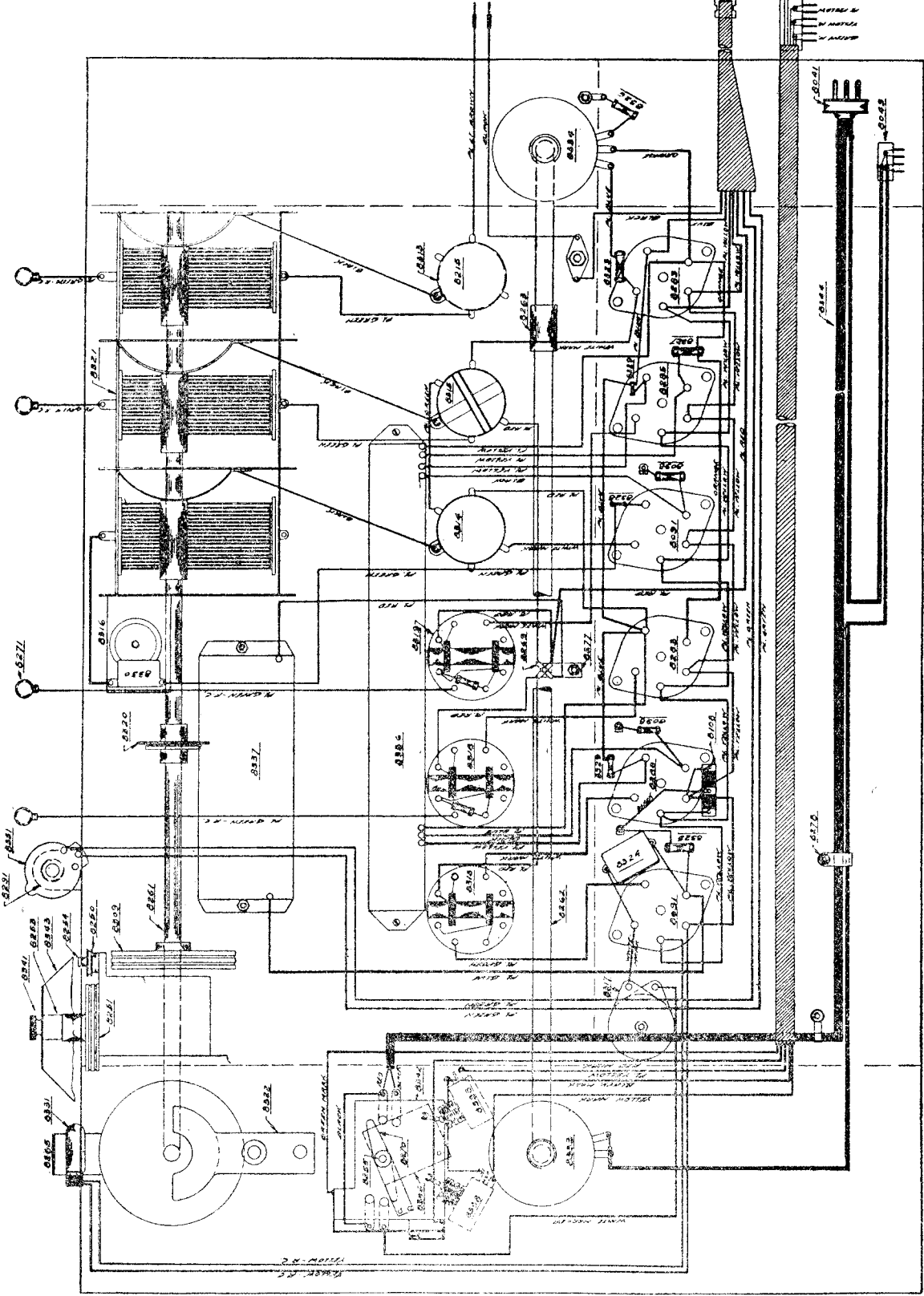
CAPEHART CORPORATION



PICTORIAL - UNDERSIDE OF CAPEHART PZ AMPLIFIER *8078 (400 Series)

CAPEHART CORPORATION

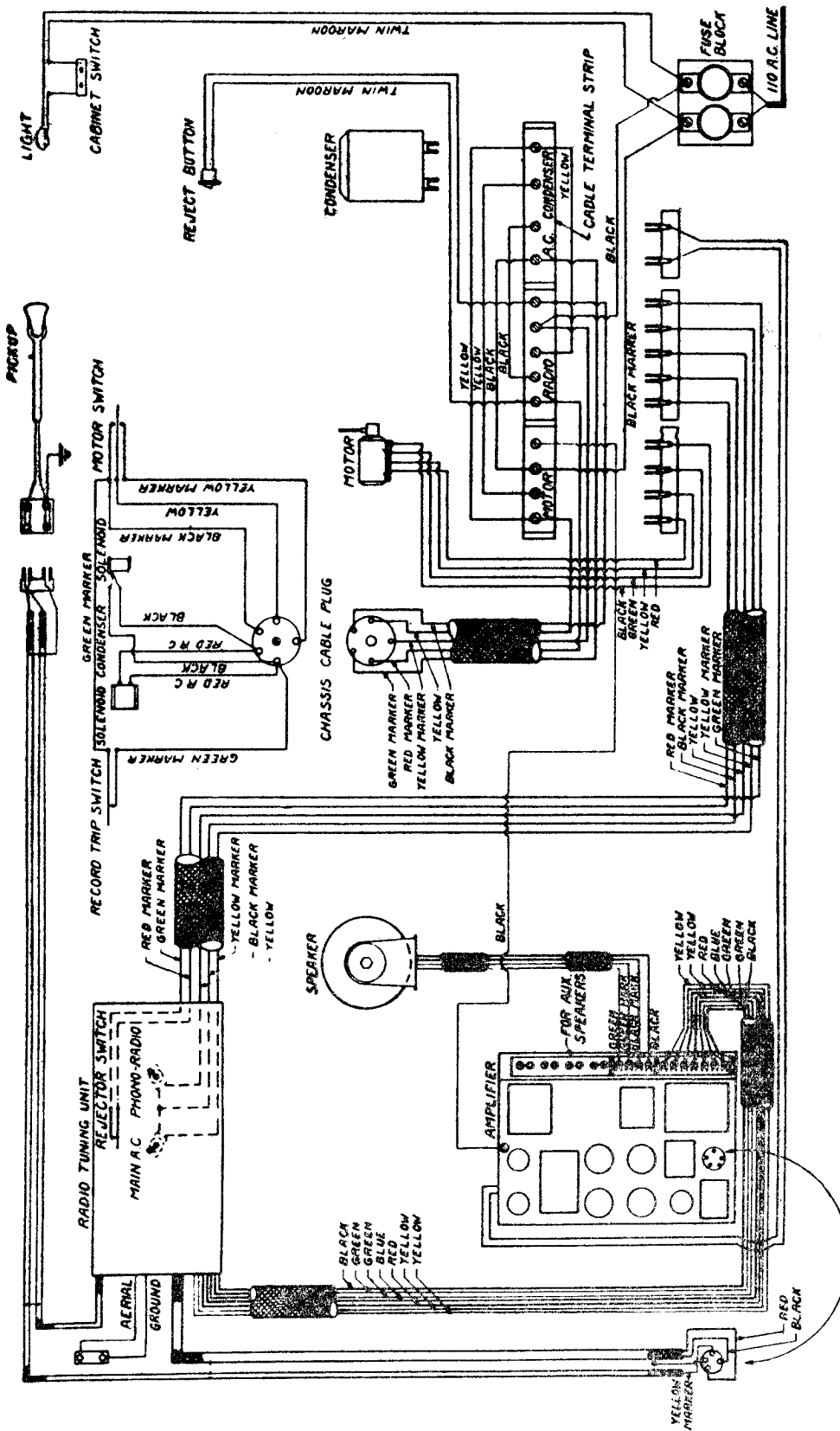
MODEL 400 Series
Radio Amp.
Chassis



VICTORIAL - CAPEHART RADIO TUNER 3076 (400 Series)

MODEL 400,401,402
Complete Wiring

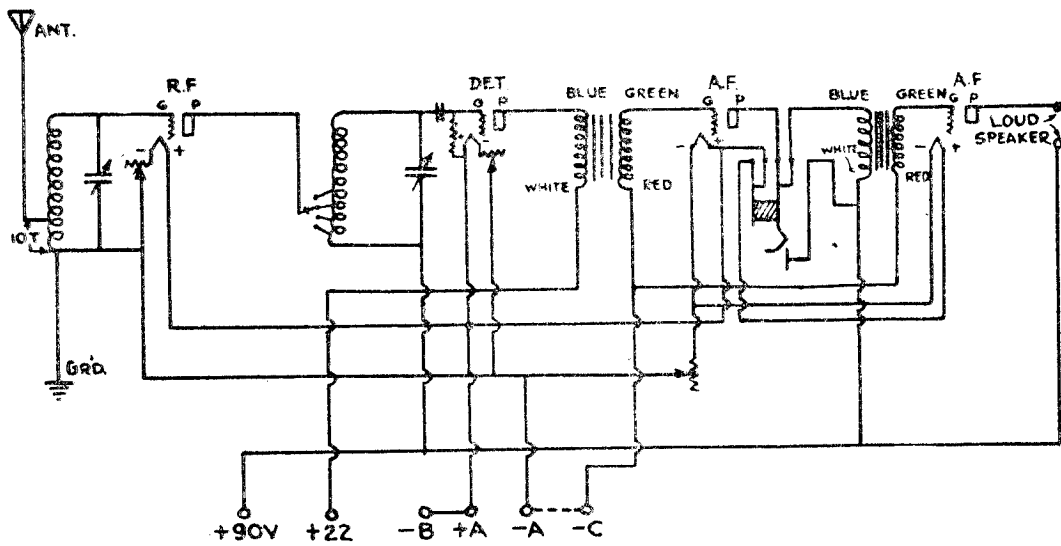
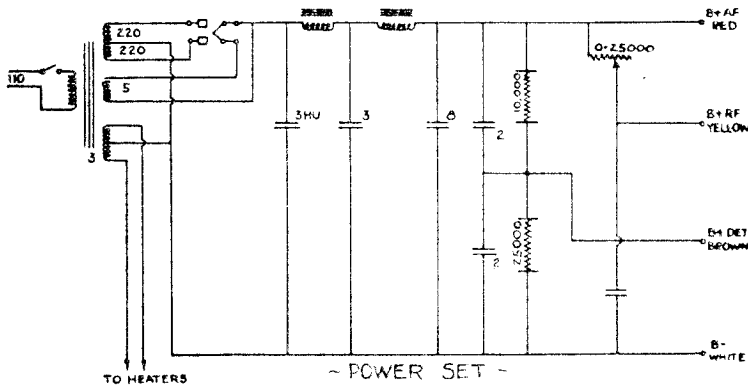
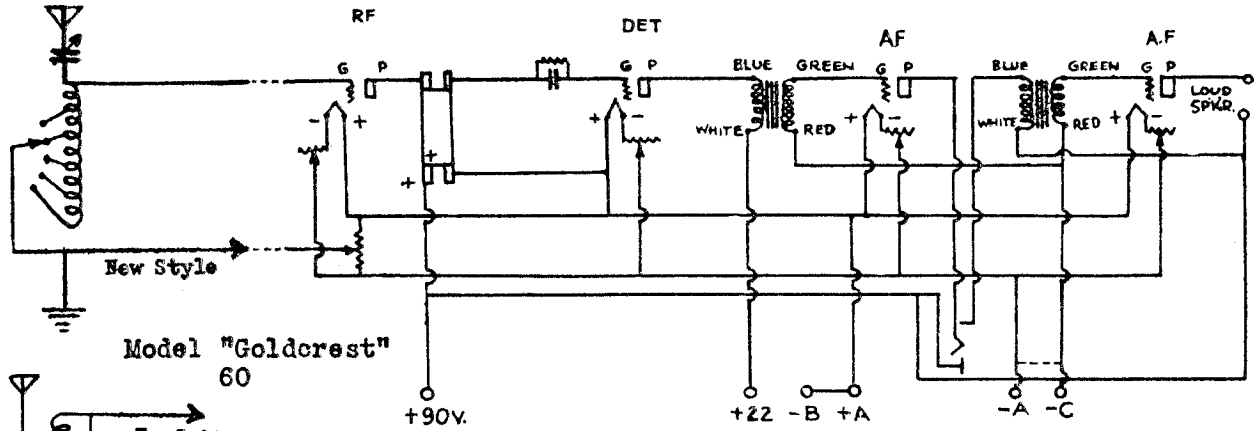
CAPEHART CORPORATION



WIRING DIAGRAM CAPEHART DE LUXE MODEL # 400-401 & 402

CLEARTONE RADIO CORPORATION

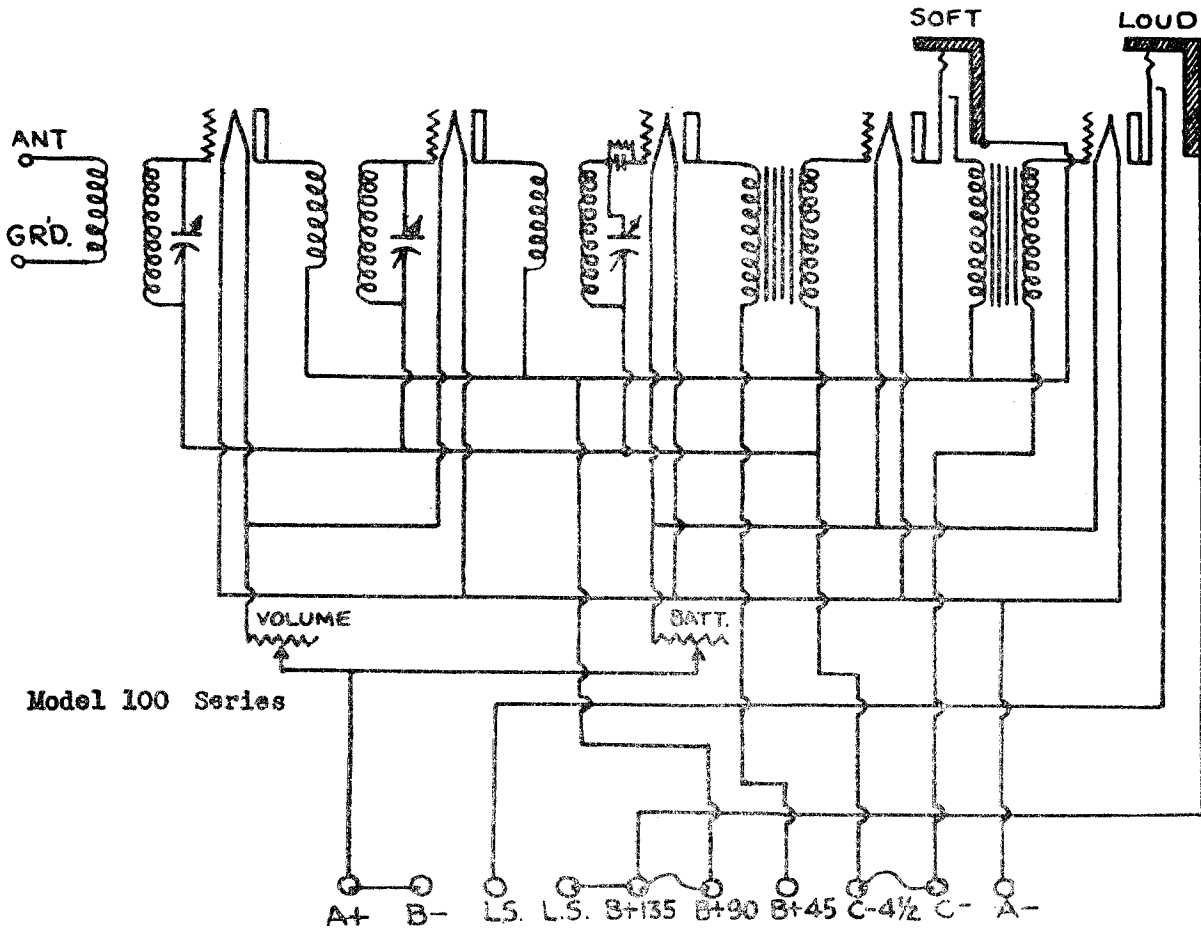
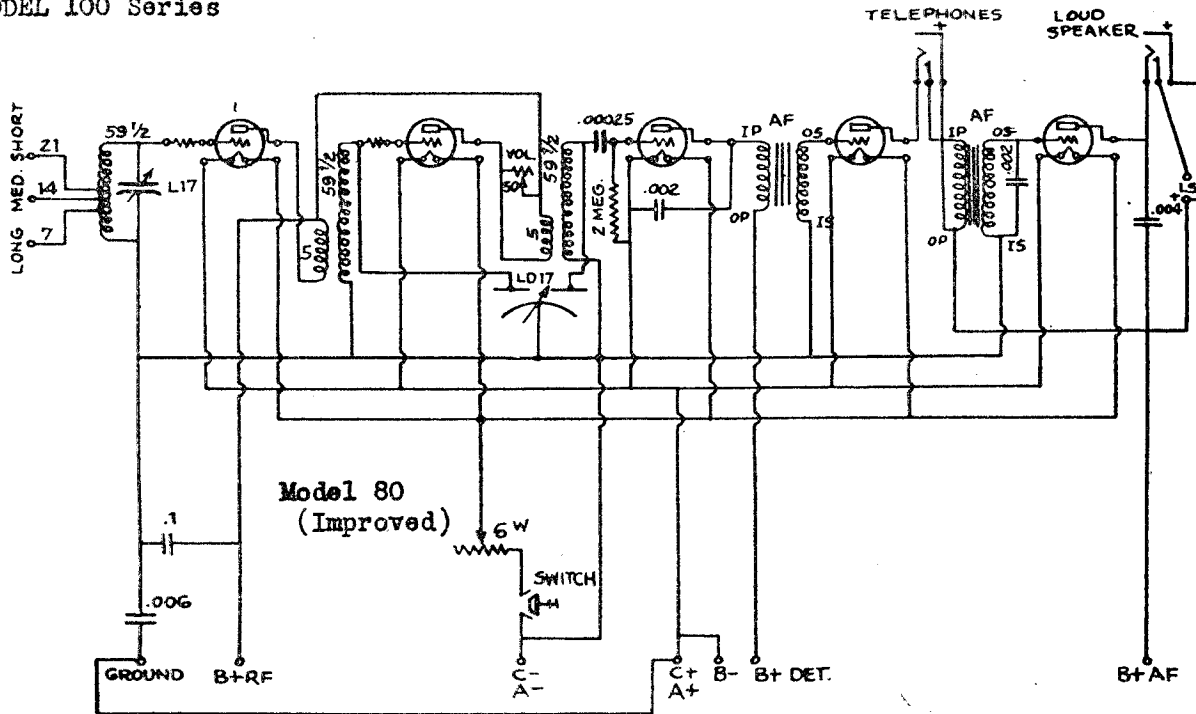
MODEL 60 -
Goldcrest
MODEL 70
Clearodyne



Model Clearodyne 70

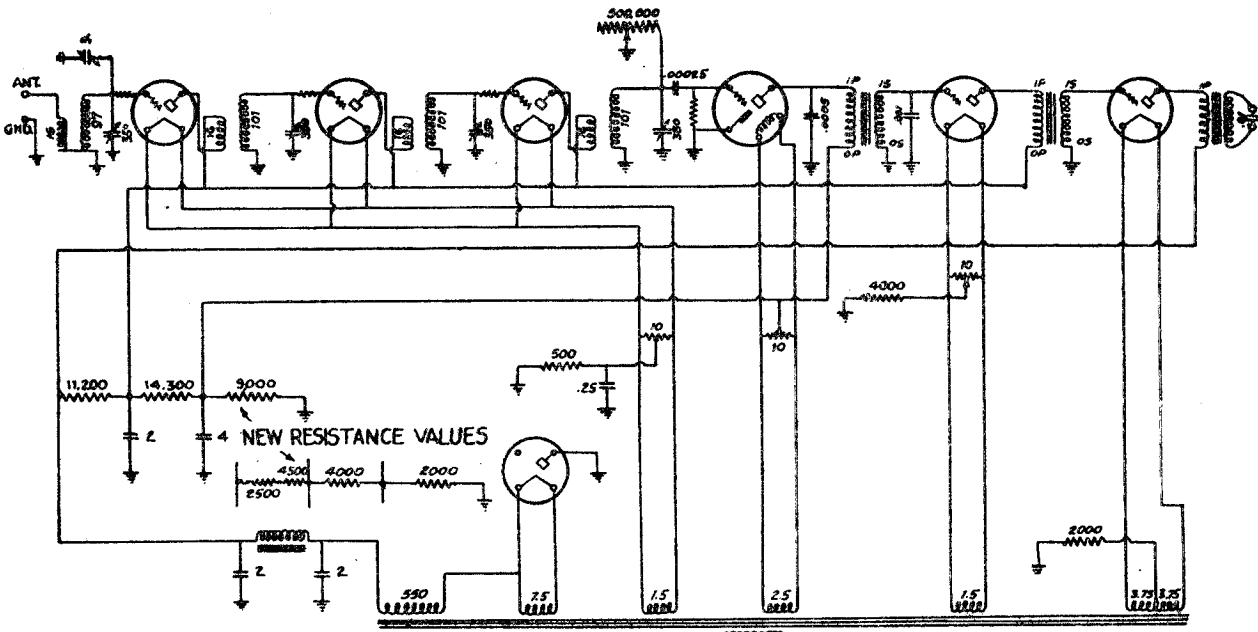
MODEL 80
(Improved)
MODEL 100 Series

CLEAR TONE RADIO CORPORATION

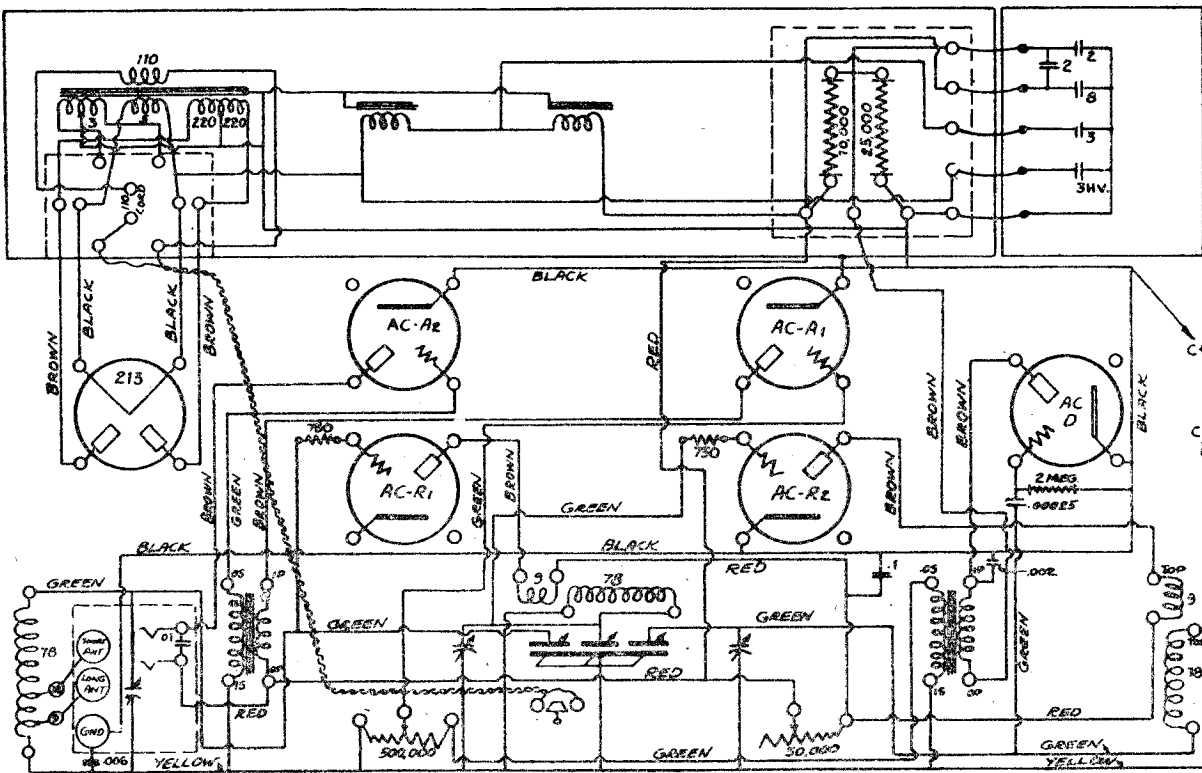


CLEARTONE RADIO CORPORATION

MODEL 110
MODEL 112



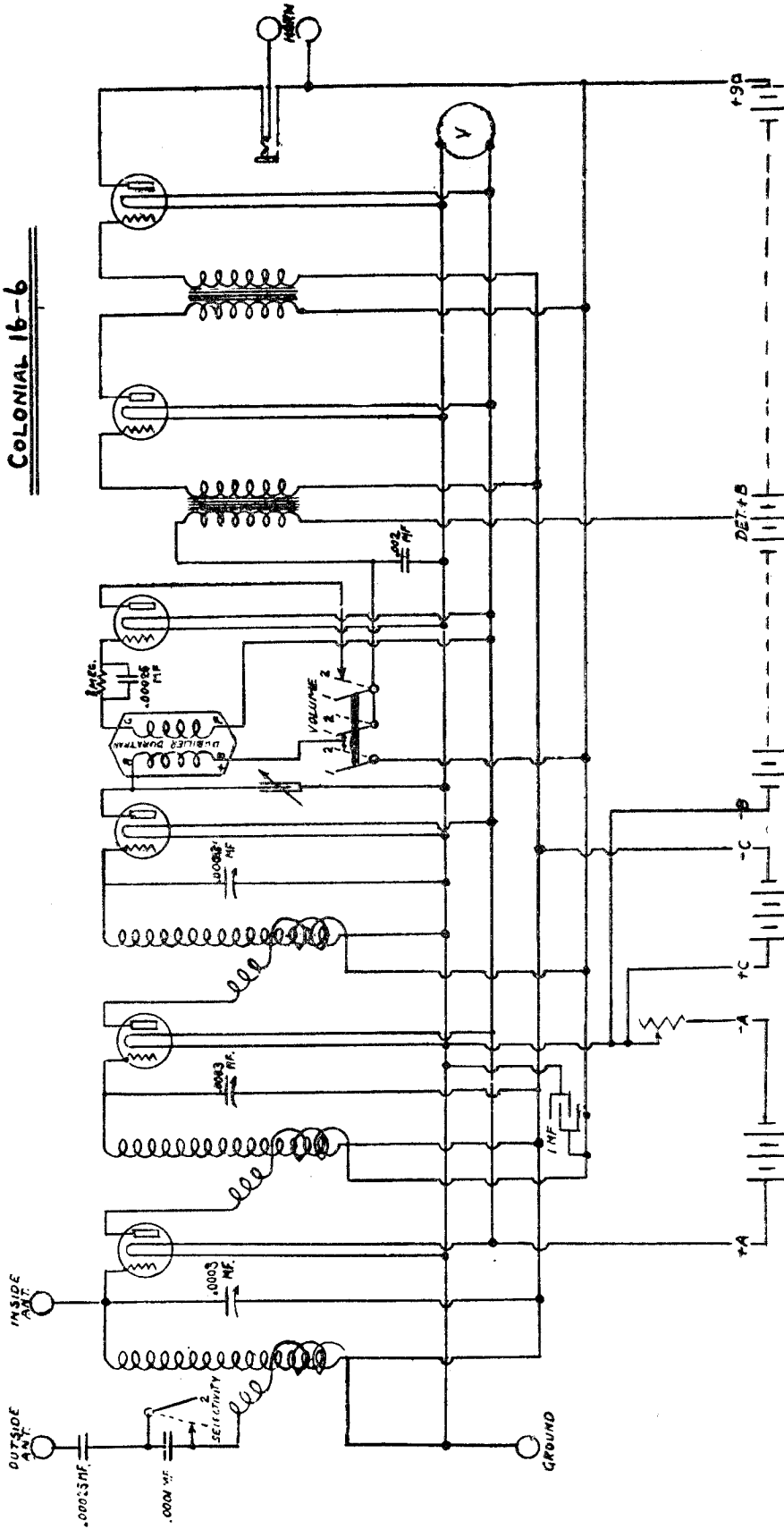
Model Cleartone 112



Model Cleartone 110

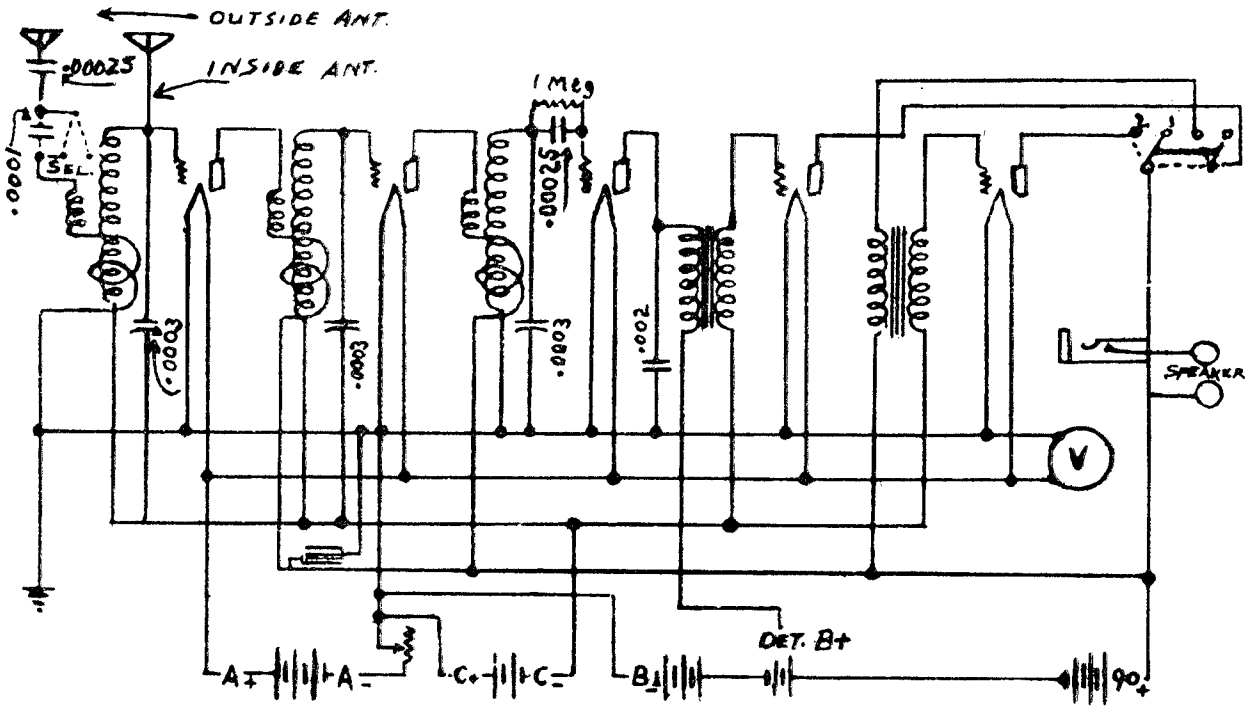
COLONIAL RADIO CORP.

MODEL 16-6

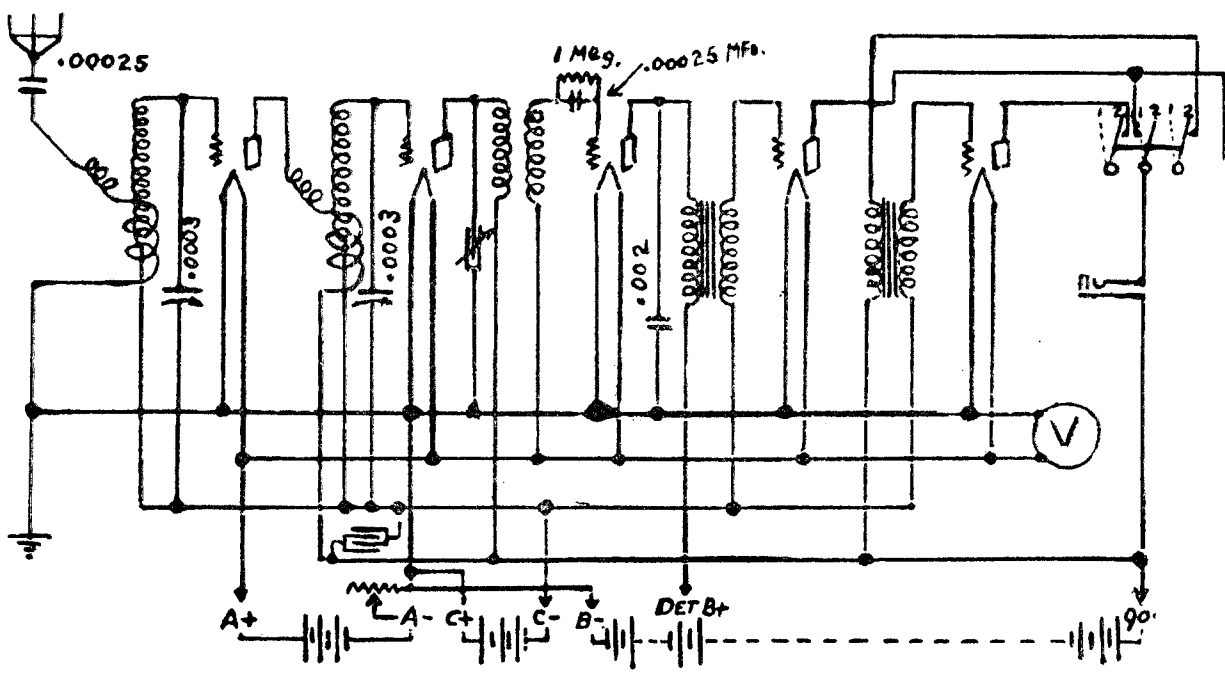


MODEL 16-5
MODEL 17-5

COLONIAL RADIO CORP.



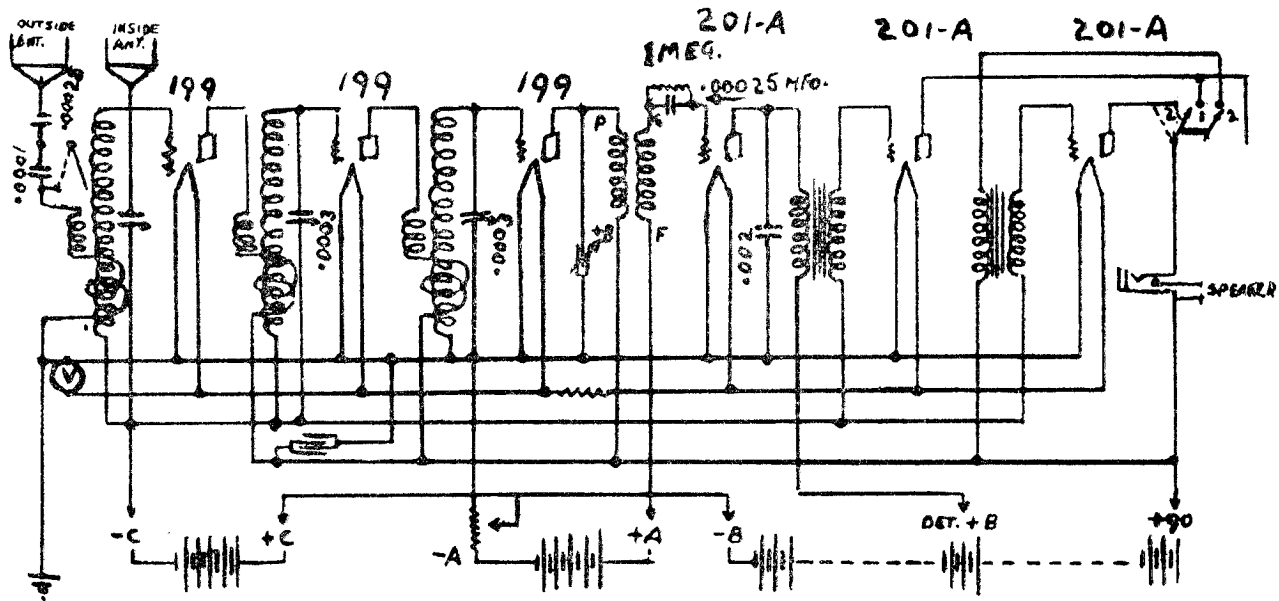
Model 16-5



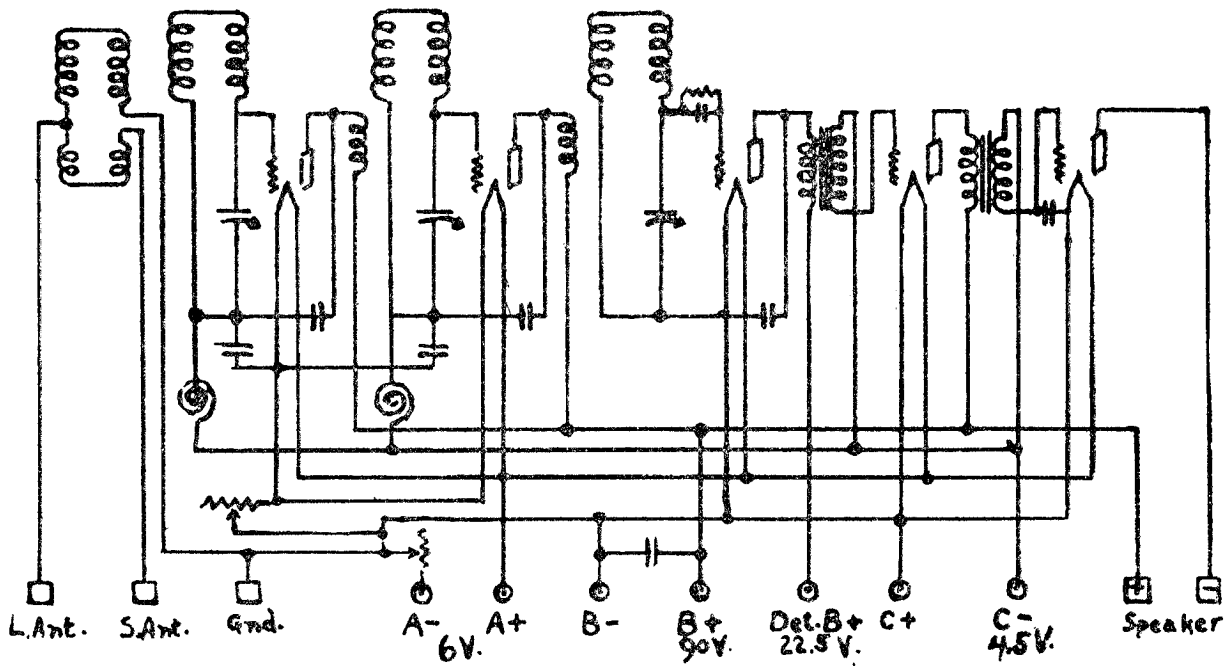
Model 17-5

COLONIAL RADIO CORP.

MODEL 20
MODEL 21



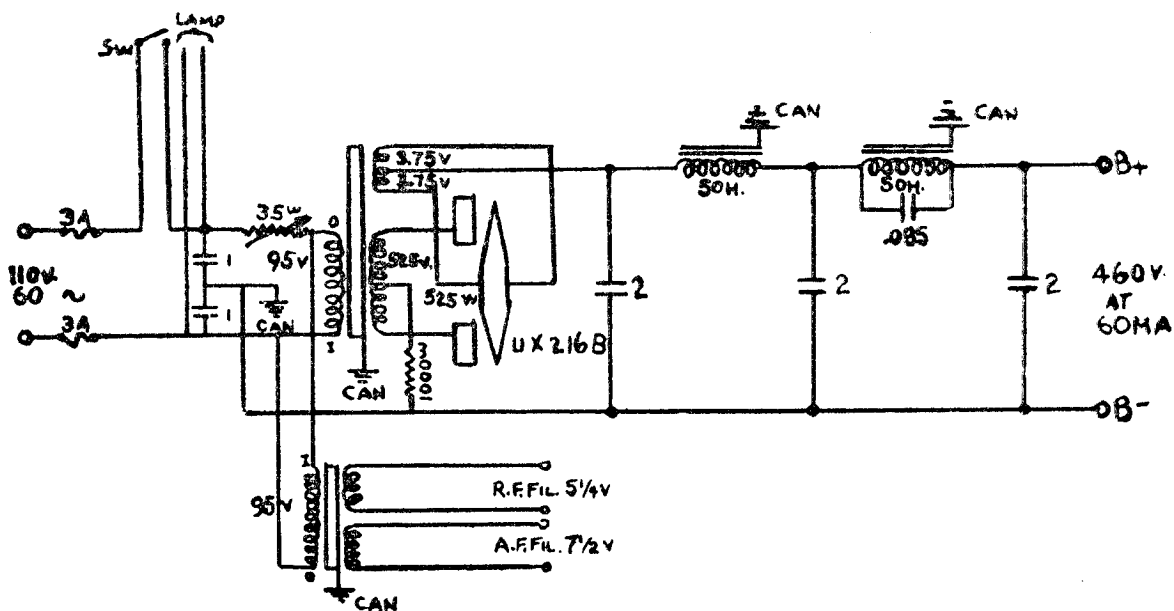
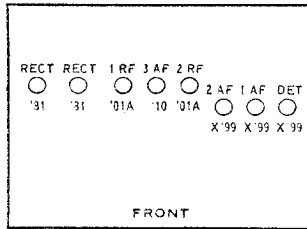
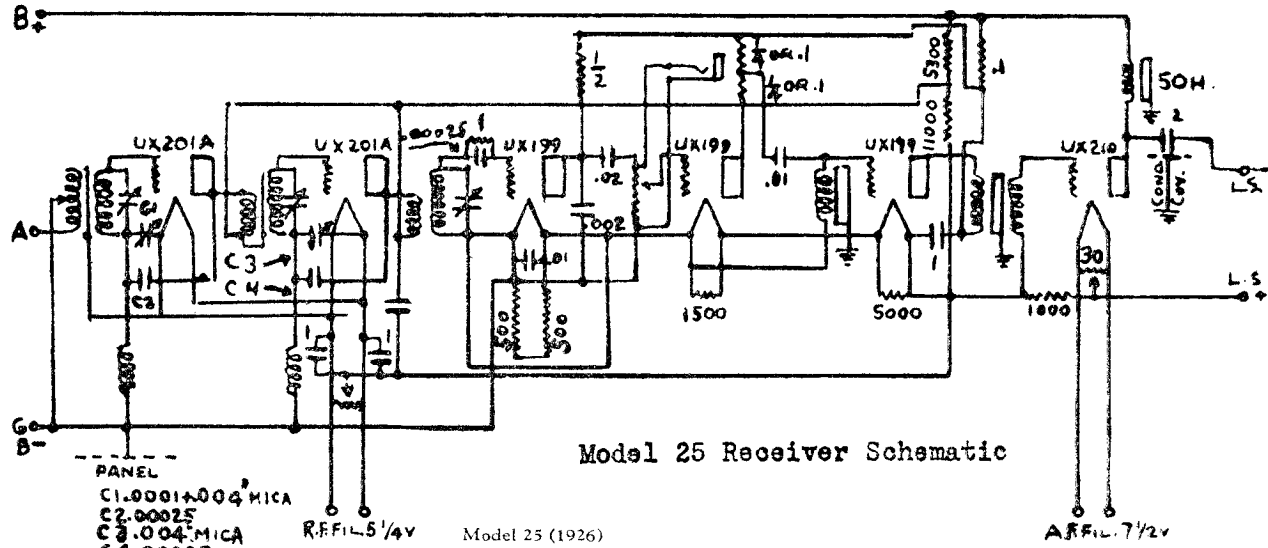
Model 20



Model 21

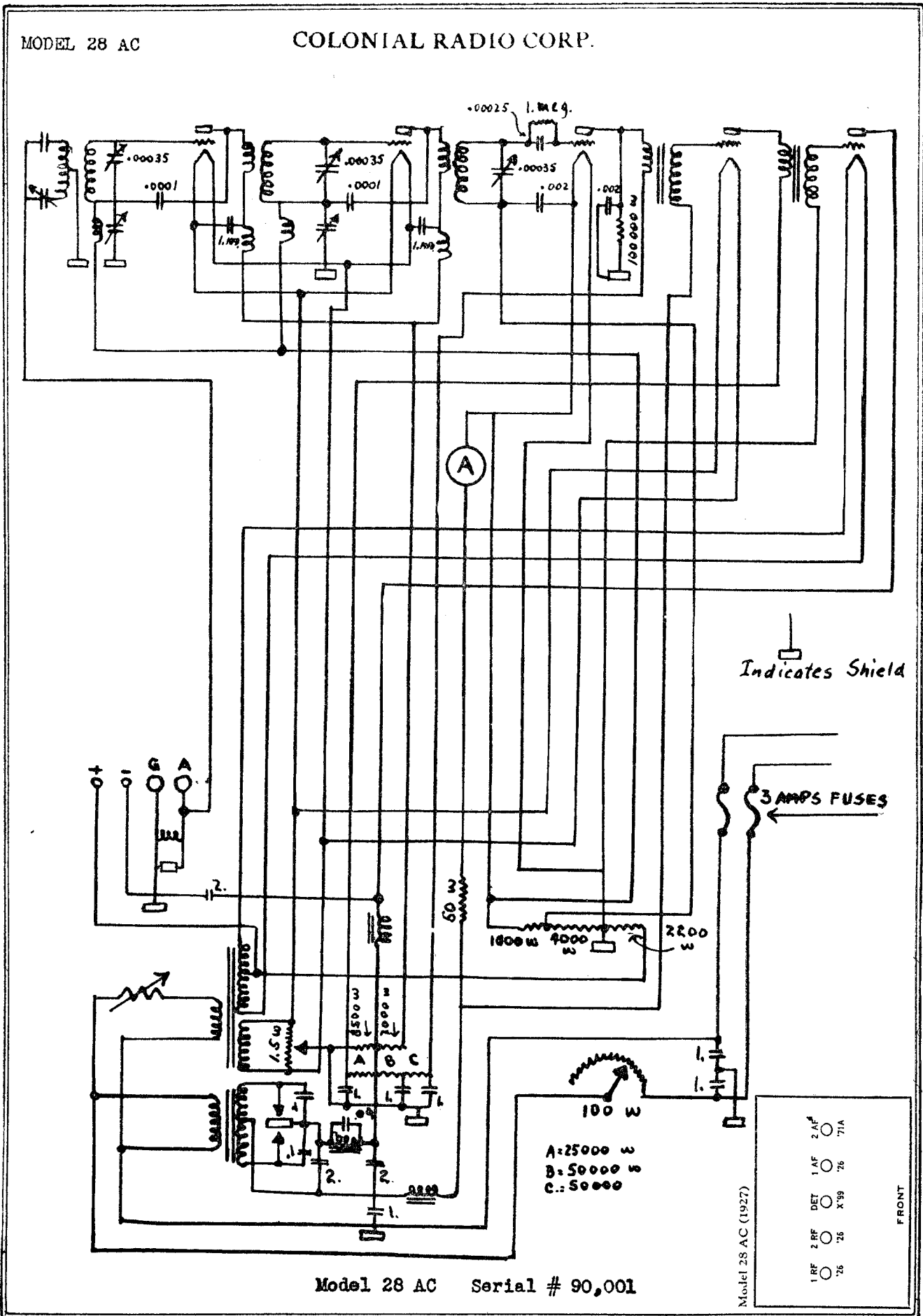
MODEL 25

COLONIAL RADIO CORP



MODEL 28 AC

COLONIAL RADIO CORP.



Model 28 AC Serial # 90,001

Model 28 AC (1927)

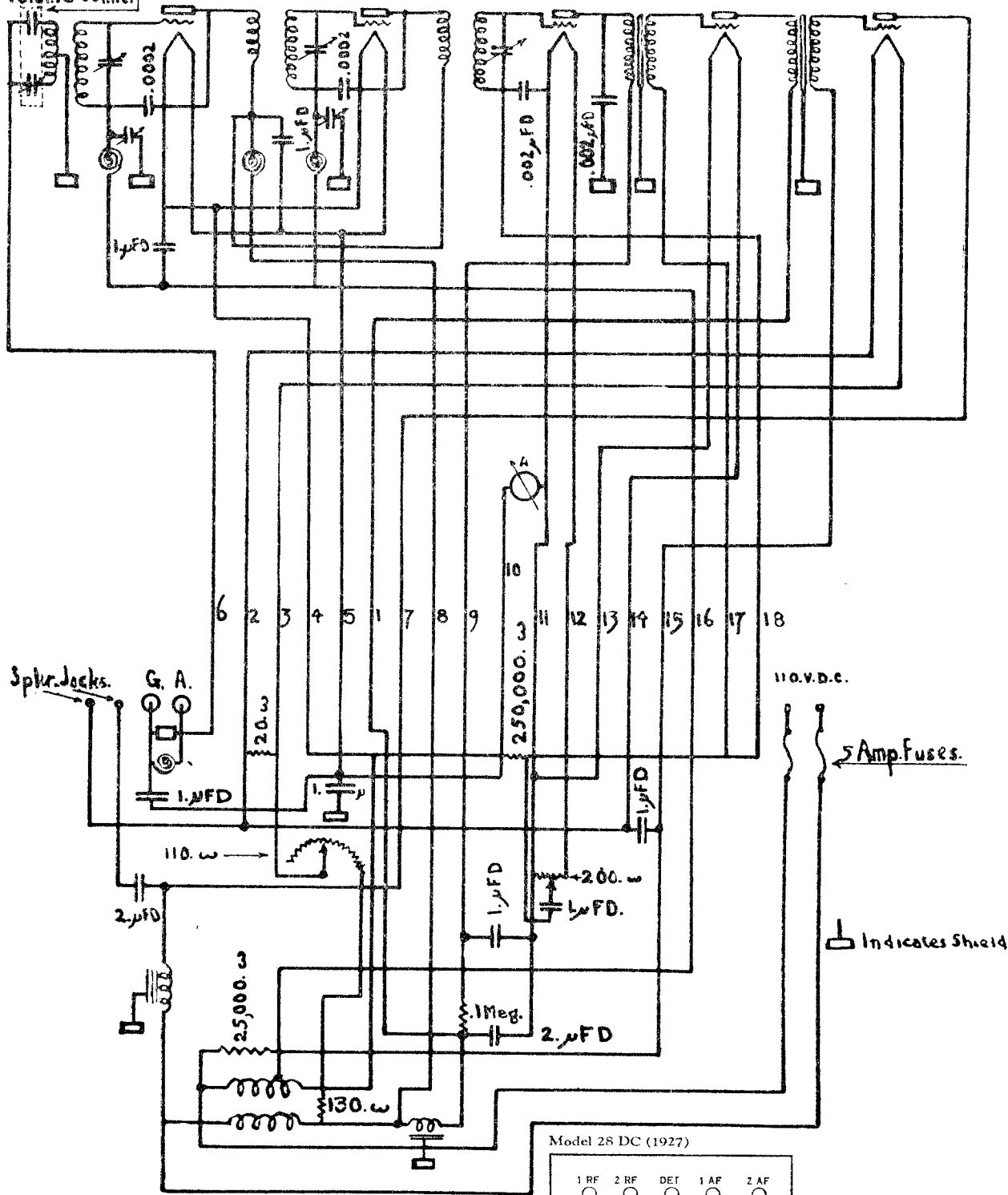
1 BF	2 BF	DET	1 AF	2 AF
'26	'26	'26	'26	'71A

FRONT

COLONIAL RADIO CORP.

MODEL 28 DC

Volume Control



Splr. Jacks.

G. A.

110. ω

110.v.d.c.

5 Amp. fuses.

Indicates Shield

Model 28 DC Serial # 85,001

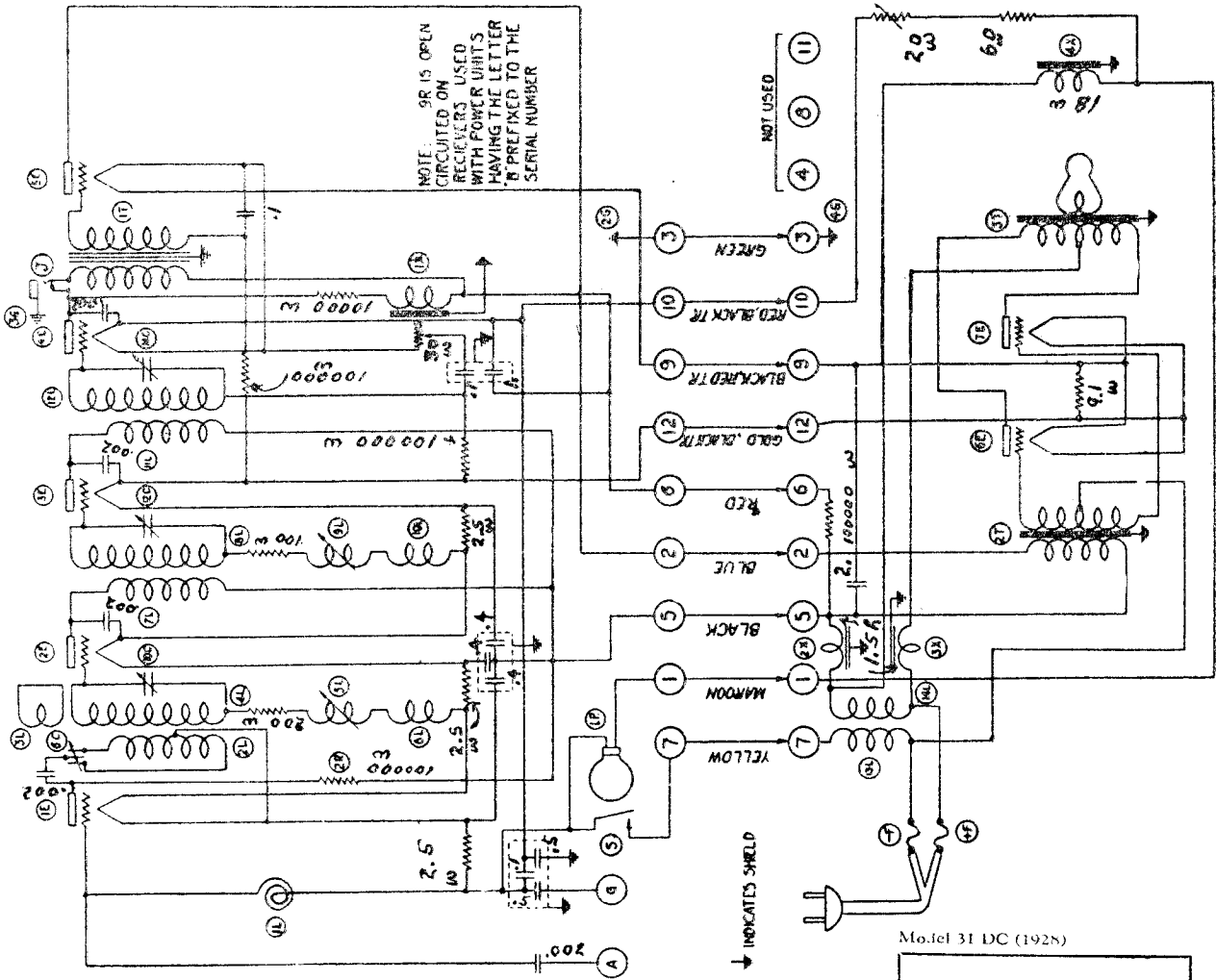
Model 28 DC (1927)

1 RF	2 RF	DET	1 AF	2 AF
01A	01A	01A	01A	71A
		OR		
		12A		

FRONT

MODEL 31 DC

COLONIAL RADIO CORP.

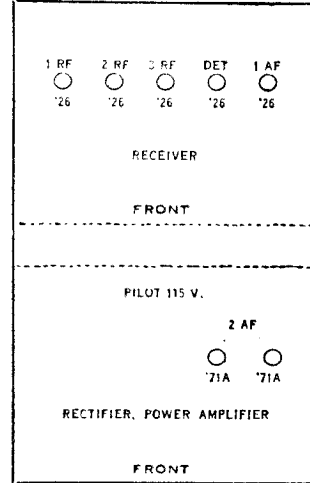


STAGE	TUBE	GRID VOLTAGE		FILAMENT VOLTAGE		PLATE VOLTAGE		PLATE CURRENT	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
1 ST RF	CX 326 UX 226	2	4	1.4	1.6	50	90	2	5
2 ND RF	"	2	4	1.4	1.6	75	120	5	10
3 RD RF	"	2	4	1.4	1.6	75	115	5	10
DETECTOR	"	2	4	1.3	1.5	40	70	1	.5
1 ST AF	"	1.5	3	1.3	1.5	70	100	2.5	5.5
2 ND AF #1	UX 171A CX 371A	12	16	4.4	5.1	75	115	8	20
2 ND AF #2	"	12	16	4.4	5.1	75	115	8	20

TUBE CURRENT AND VOLTAGE CHART

Model 31 D. C.

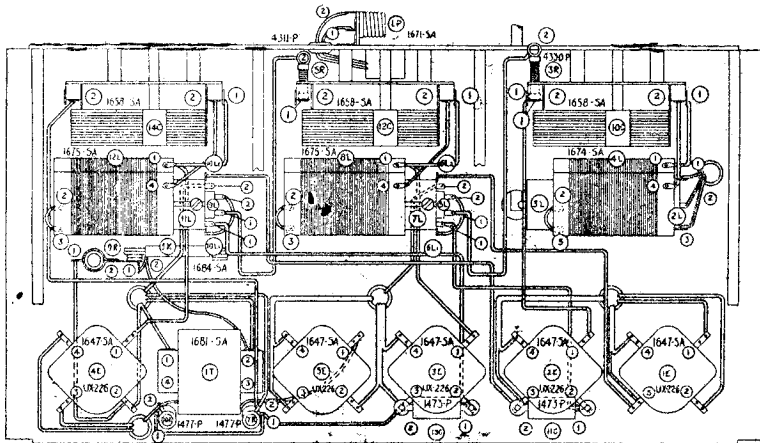
50,010



CIRCUIT DIAGRAM
MODEL 31 DC 50,001 - 40,001
COLONIAL RADIO CORPORATION

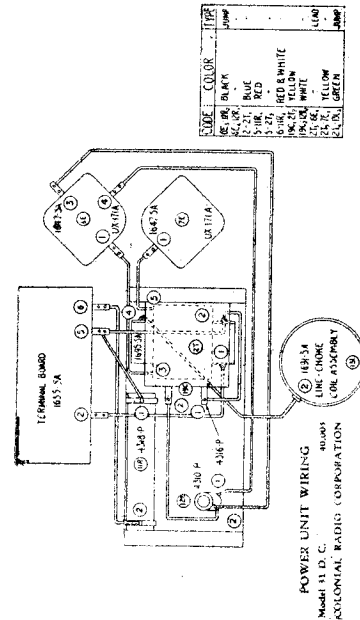
COLONIAL RADIO CORP.

MODEL 31 DC
Data
MODEL 31 AC
Voltage

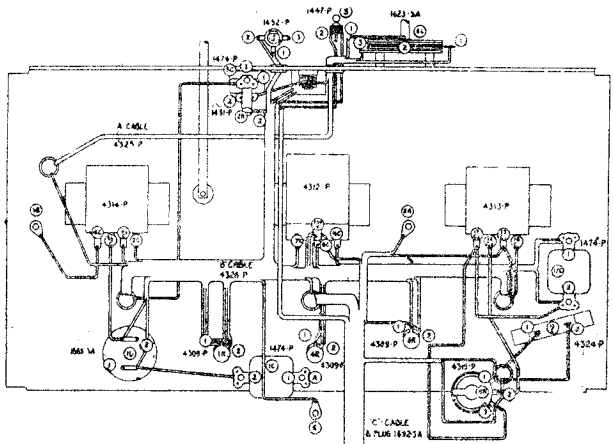


NOTE: 9R IS OPEN CIRCUITED ON RECEIVERS USED WITH POWER UNITS HAVING THE LETTER 'B' PREFIXED TO THE SERIAL NUMBER

CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	TYPE
1E-1L	BLACK	1657-5A	RED	1658-5A	RED & WHITE	1659-5A	GREEN	1661-5A	BLACK SPAGLEAD	1675-5A	TRANSFORMER
1E-4R	RED & WHITE	1657-5A	GREEN	1658-5A	RED	1659-5A	BLACK	1661-5A	YELLOW	1675-5A	TRANSFORMER
1E-5L	BLUE	1657-5A	GREEN	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN OR RED	1675-5A	TRANSFORMER
1E-7R	WHITE	1657-5A	BLUE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN	1675-5A	TRANSFORMER
1E-11C	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-11G	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-16R	BLUE	1657-5A	YELLOW*	1658-5A	BLACK	1659-5A	BLACK	1661-5A	WHITE	1675-5A	TRANSFORMER
1E-16L	WHITE	1657-5A	BLACK, RED TR	1658-5A	RED	1659-5A	BLACK	1661-5A	BLUE	1675-5A	TRANSFORMER
1E-17C	YELLOW	1657-5A	BLUE	1658-5A	RED	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-17L	GREEN, BLACK TR	1657-5A	BLUE	1658-5A	RED	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-17G	NO WIRE	1657-5A	YELLOW	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	MAGNOLIA	1675-5A	TRANSFORMER
1E-17D	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN	1675-5A	TRANSFORMER



TOP VIEW OF RADIO SET WIRING
Model 31 DC 50,002



CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	COLOR	TYPE CODE	TYPE
1E-1L	BLACK	1657-5A	RED	1658-5A	RED	1659-5A	GREEN	1661-5A	BLACK SPAGLEAD	1675-5A	TRANSFORMER
1E-4R	RED & WHITE	1657-5A	GREEN	1658-5A	RED	1659-5A	BLACK	1661-5A	YELLOW	1675-5A	TRANSFORMER
1E-5L	BLUE	1657-5A	GREEN	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN OR RED	1675-5A	TRANSFORMER
1E-7R	WHITE	1657-5A	BLUE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN	1675-5A	TRANSFORMER
1E-11C	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-11G	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-16R	BLUE	1657-5A	YELLOW*	1658-5A	BLACK	1659-5A	BLACK	1661-5A	WHITE	1675-5A	TRANSFORMER
1E-16L	WHITE	1657-5A	BLACK, RED TR	1658-5A	RED	1659-5A	BLACK	1661-5A	BLUE	1675-5A	TRANSFORMER
1E-17C	YELLOW	1657-5A	BLUE	1658-5A	RED	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-17L	GREEN, BLACK TR	1657-5A	BLUE	1658-5A	RED	1659-5A	BLACK	1661-5A	RED	1675-5A	TRANSFORMER
1E-17G	NO WIRE	1657-5A	YELLOW	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	MAGNOLIA	1675-5A	TRANSFORMER
1E-17D	NO WIRE	1657-5A	WHITE	1658-5A	RED & WHITE	1659-5A	BLACK	1661-5A	GREEN	1675-5A	TRANSFORMER

BOTTOM VIEW OF RADIO SET WIRING
Model 31 AC 50,001
COLONIAL RADIO CORPORATION

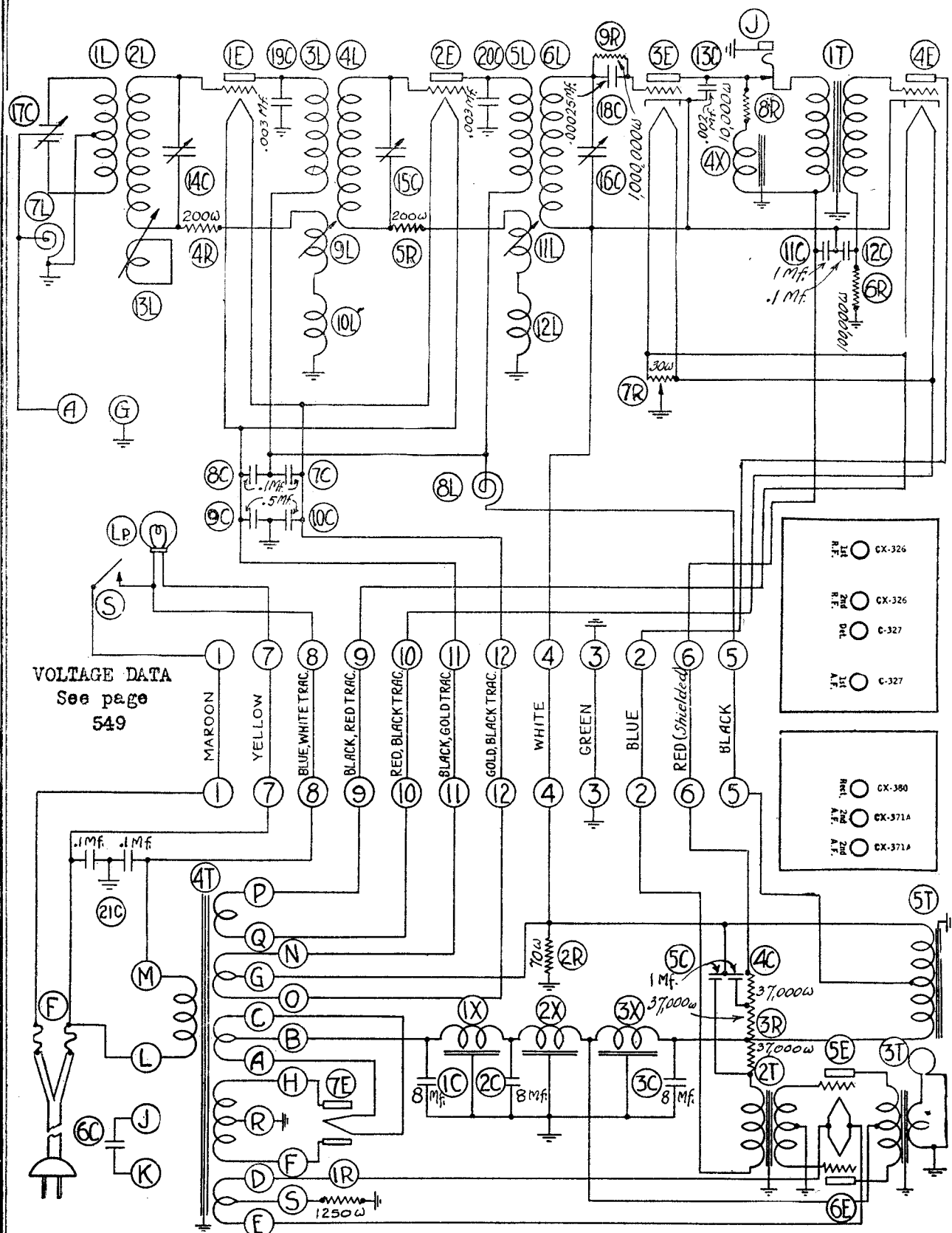
STAGE	TUBE	GRID VOLTAGE AT SOCKET		FILAMENT VOLTAGE AT SOCKET		PLATE VOLTAGE AT SOCKET		PLATE CURRENT AT SOCKET			
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
1ST	R.F.	-4.5	-6.1	1.53	1.77	1.35	1.55	95	125	6	9
2ND	R.F.	-4.5	-6.1	1.53	1.77	1.35	1.55	95	125	6	9
DETECTOR	UY-227	0	0	1.98	2.42	1.75	2.15	30	40	2	3
1ST	A.F.	-4.5	-6.1	1.98	2.42	1.75	2.15	80	110	3	4
2ND	A.F.	-38	-52	4.6	5.10	4.55	5.05	160	220	15	21
3RD	A.F.	-38	-52	4.6	5.10	4.55	5.05	160	220	15	21
RECTIFIER	UX-280	—	—	4.6	5.10	4.55	5.05	—	—	42	58

TUBE CURRENT AND VOLTAGE CHART

Model 31 AC 60001-5001

MODEL 31 AC

COLONIAL RADIO CORP.



VOLTAGE DATA
See page 549

- | | |
|----------|---------|
| 1st R.F. | CX-326 |
| 2nd R.F. | CX-326 |
| Det. | C-327 |
| 1st A.F. | C-327 |
| Rect. | CX-380 |
| 2nd A.F. | CX-371A |
| 2nd A.F. | CX-371A |

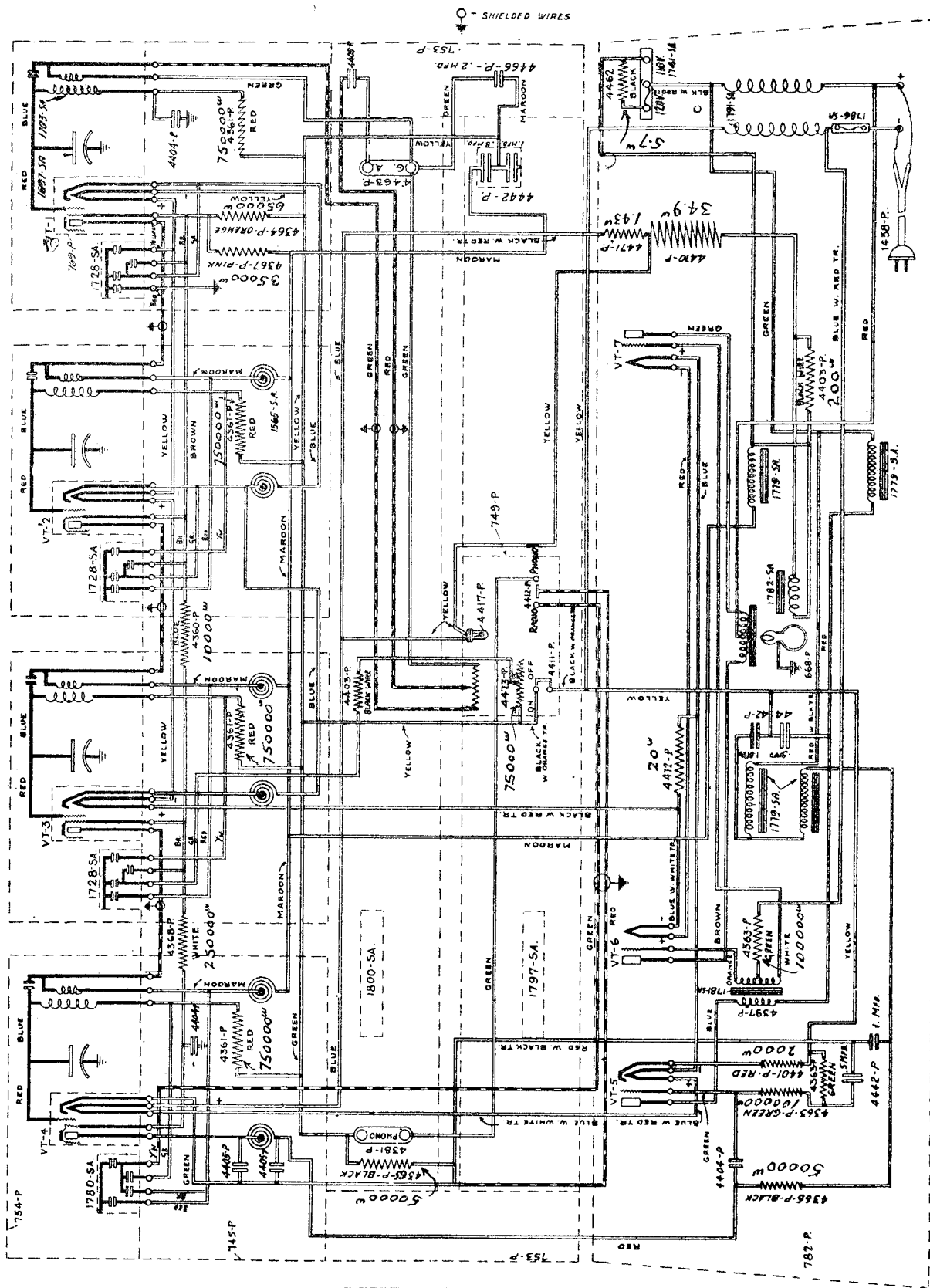
CIRCUIT DIAGRAM

MODEL 31 AC

60001-5001

COLONIAL RADIO CORP.

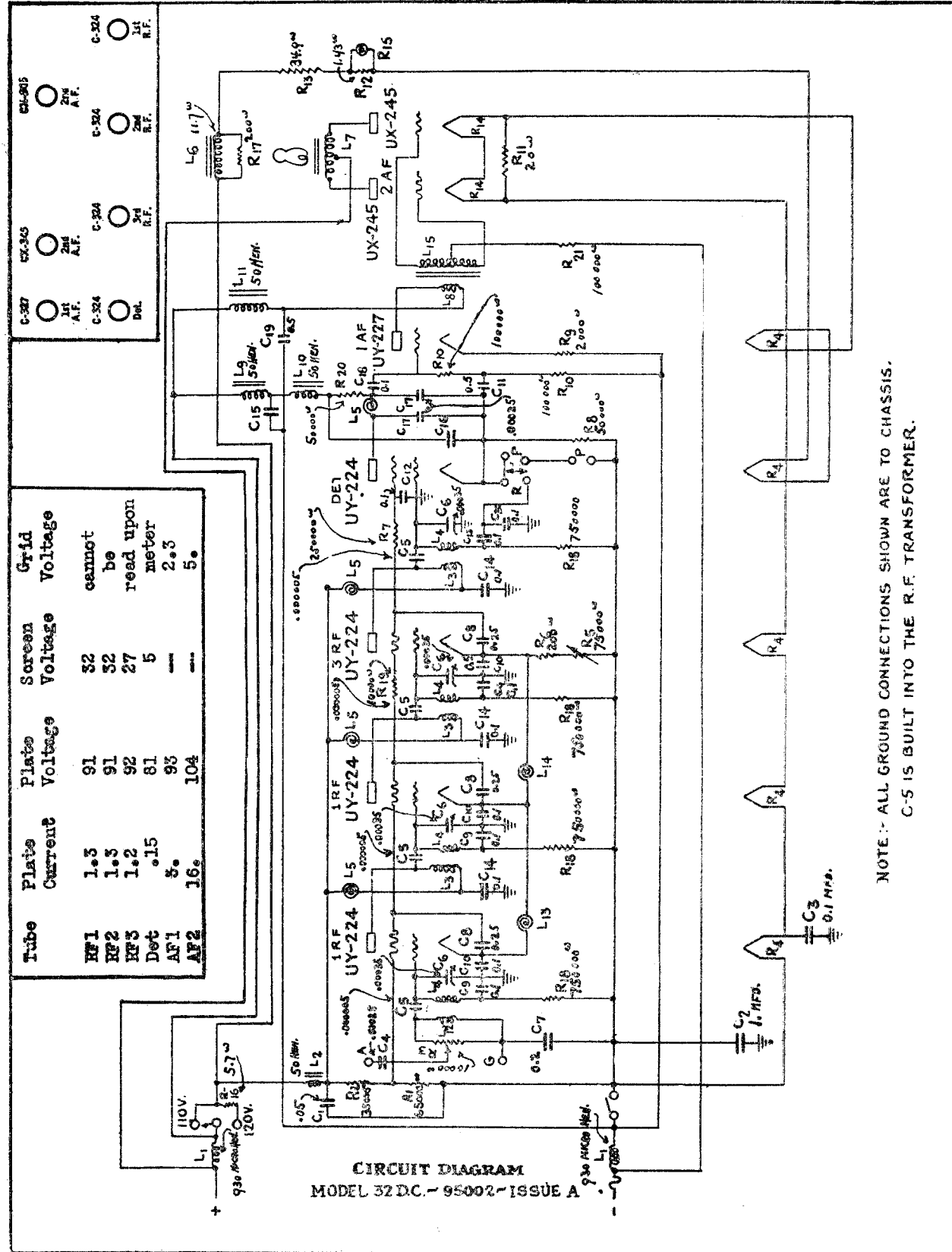
MODEL 32 DC Chassis



SCHEMATIC DIAGRAM
Model 32 D.C. ~ 95001 ~ Issue A

MODEL 32 DC

COLONIAL RADIO CORP.

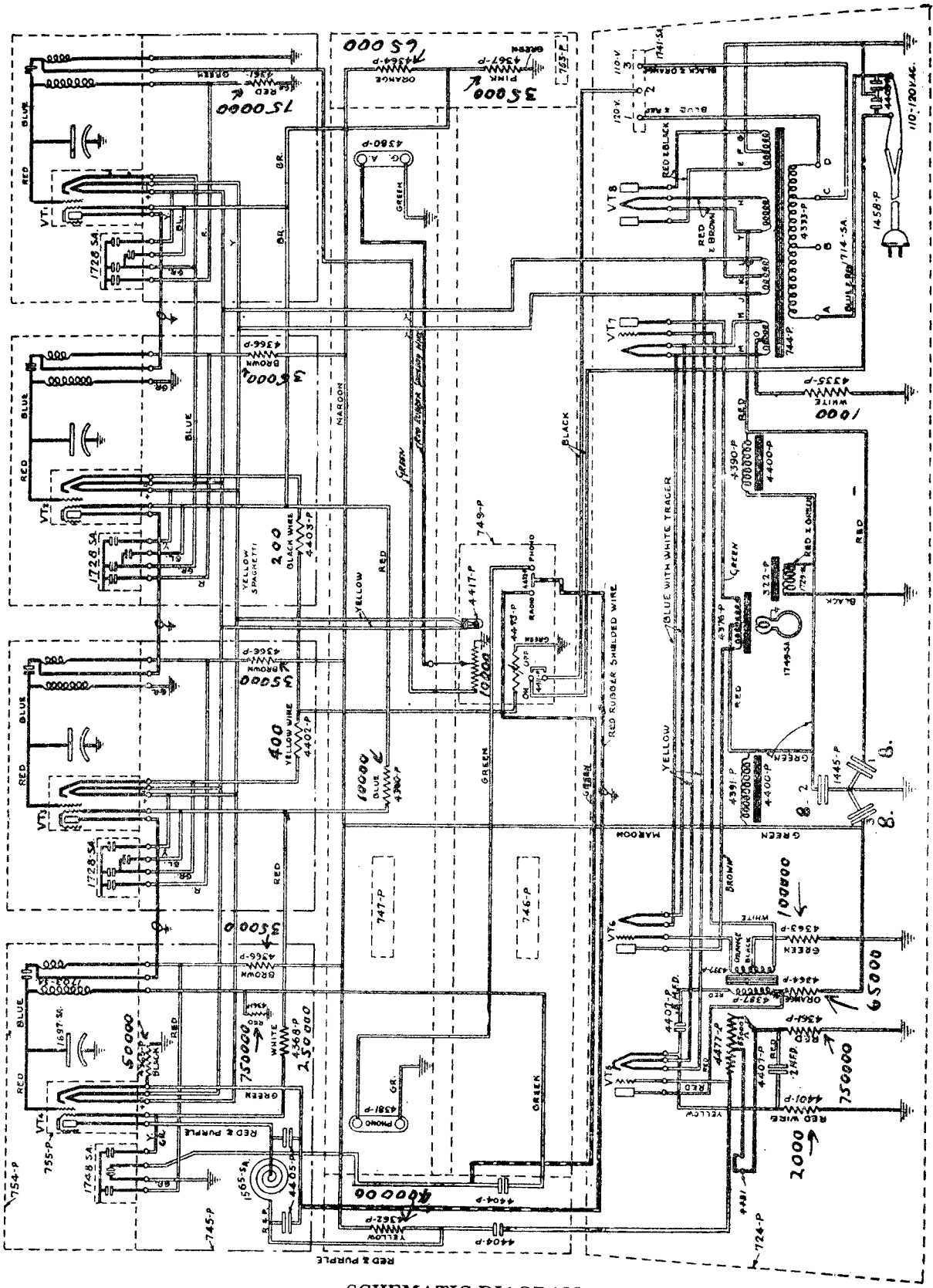


NOTE: ALL GROUND CONNECTIONS SHOWN ARE TO CHASSIS.
C-5 IS BUILT INTO THE R.F. TRANSFORMER.

Chassis layout on next page.

COLONIAL RADIO CORP.

MODEL 32 AC
Chassis

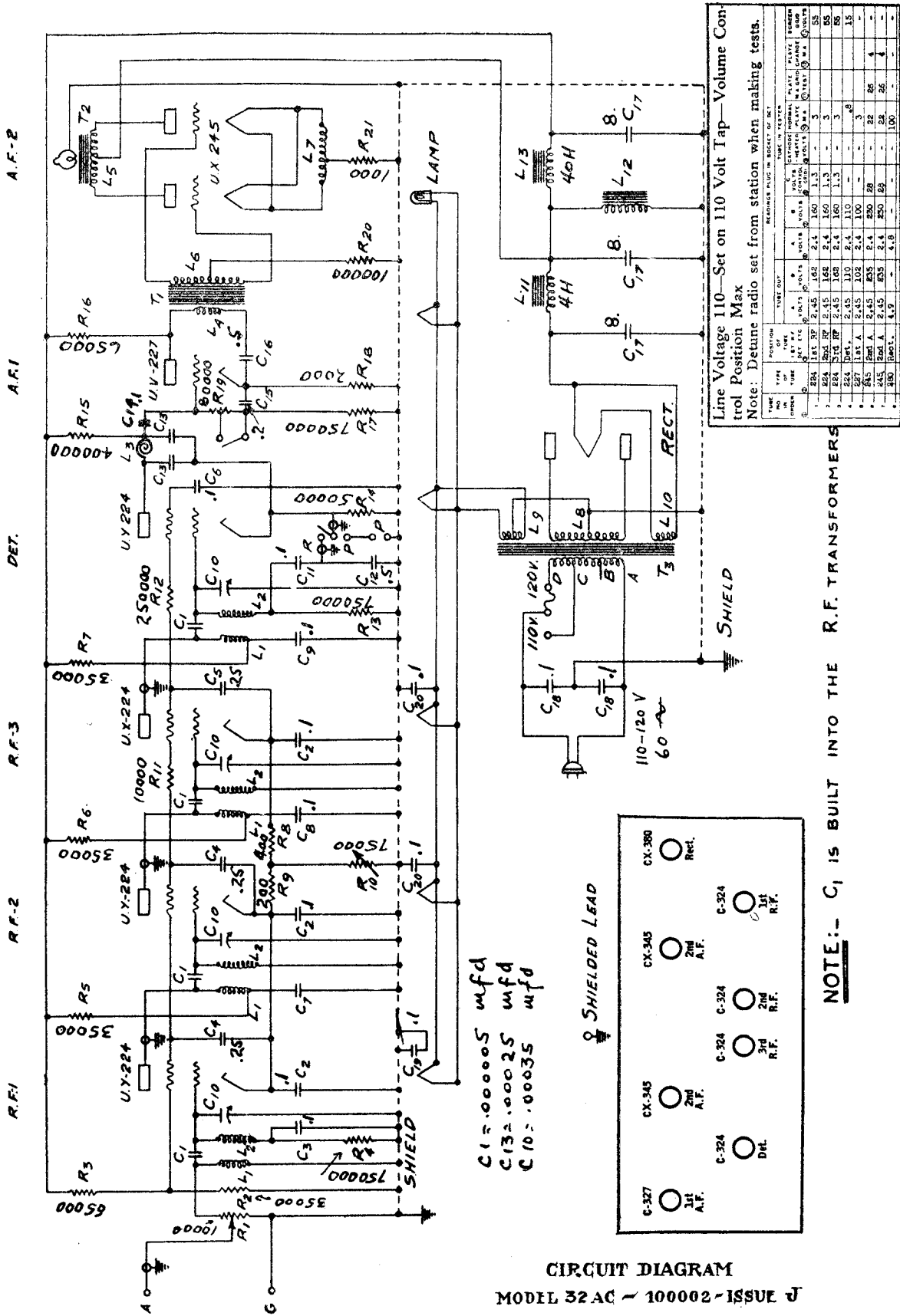


SCHMATIC DIAGRAM

Model 32 A.C. 10001-Issue J

MODEL 32 AC
Schematic

COLONIAL RADIO CORP.

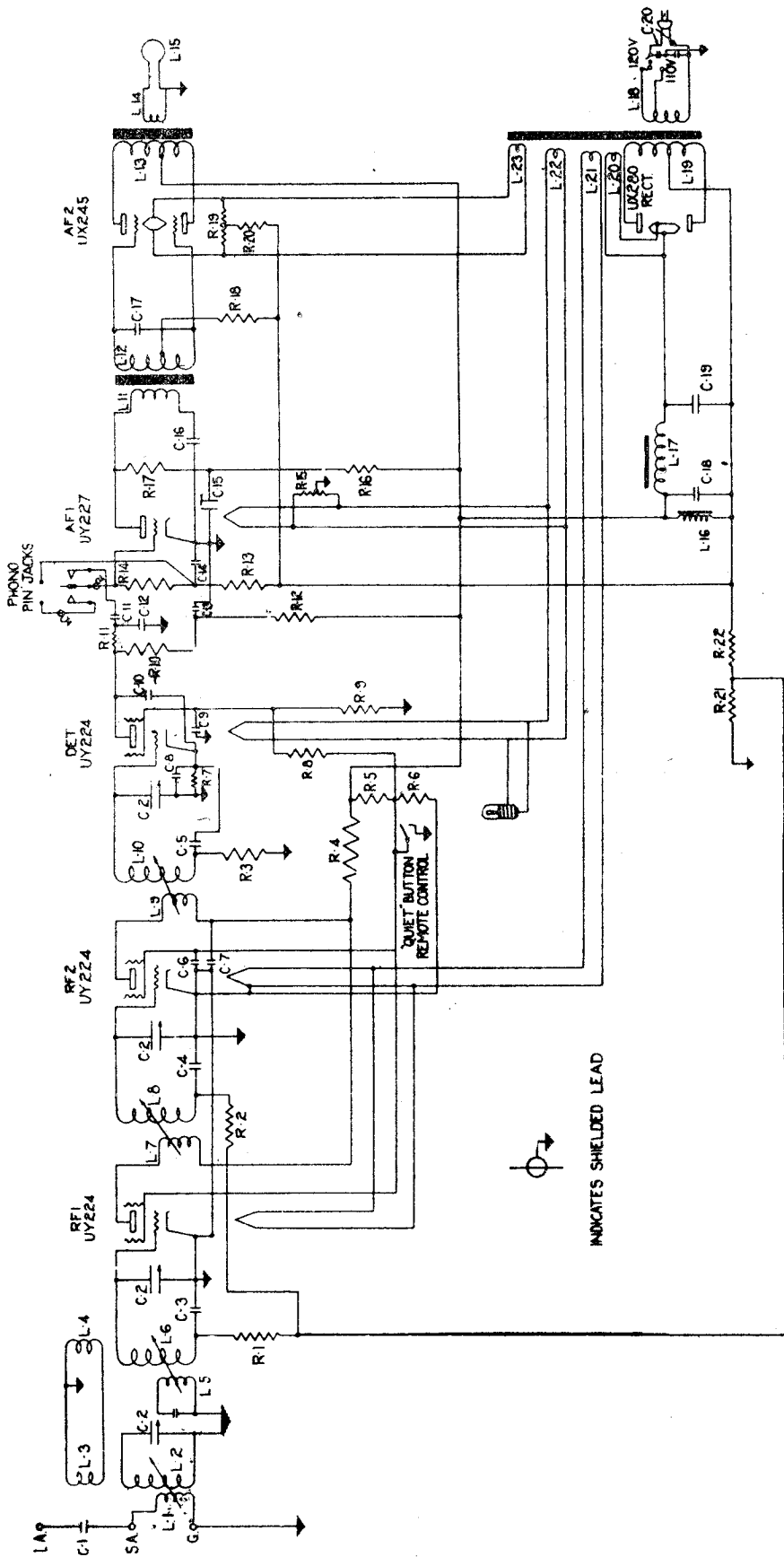


CIRCUIT DIAGRAM
MODEL 32 AC - 100002 - ISSUE J

NOTE: C₁ IS BUILT INTO THE R.F. TRANSFORMERS

COLONIAL RADIO CORP.

MODEL 33,34,35 AC
Schematic



NOTE—In the 25 cycle models, R₃ is shorted out and there is an additional

1 mfd. condenser connected from the R.F. screen-grids to ground.

Socket layout on page 560

Remote Control tuning notes on page 560

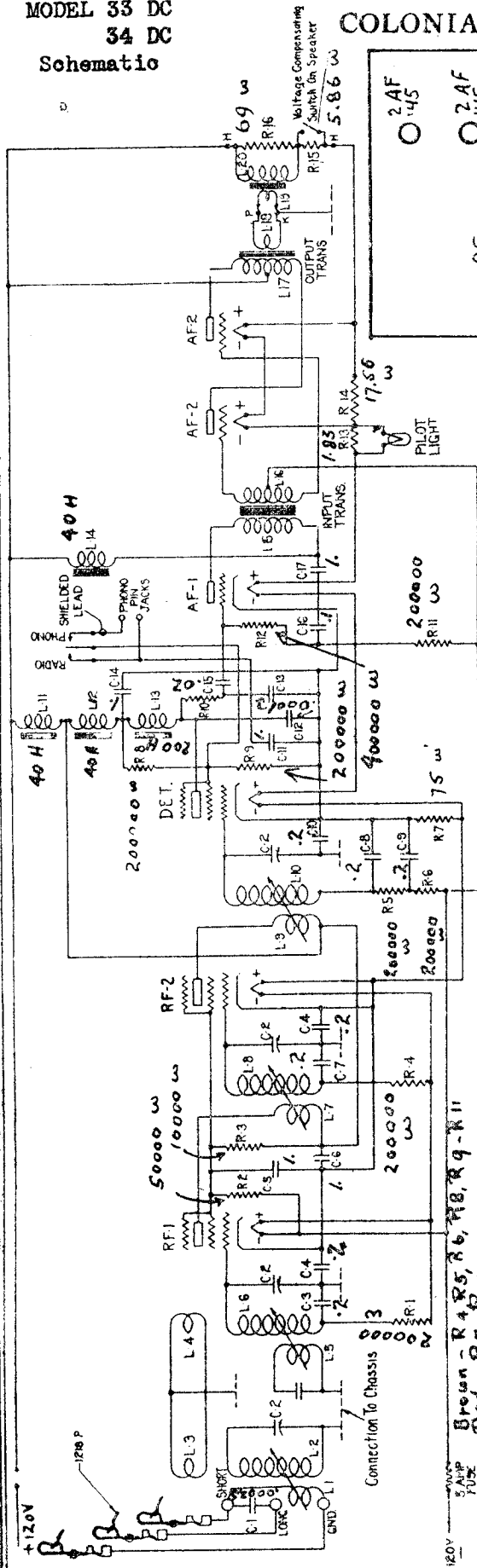
Remote Control circuit on page 561

Electrical values on next page.

INDICATES SHIELDED LEAD

MODEL 33 DC
34 DC
Schematic

COLONIAL RADIO CORP.



CIRCUIT DIAGRAM MODEL 33 DC

TUBE VOLTAGE AND CURRENT READINGS

Actual Voltages Applied to Tubes

	RF1	RF2	Det.	AF1	AF2
Plate Voltage	110v.	110v.	105v.	110v.	110v.
Control-Grid Voltage	-2.3	-2.3	-4.8	-4.8	-13
Screen-Grid Voltage	72	72	40		
Plate Current	2.5 m.a.	2.5 m.a.	0.8 m.a.	4 m.a.	15 m.a.

Voltages as Read on a 1000 OHMS Per Volt Meter

Plate Voltages on the 250 v. scale; Control-Grid Voltages on the 50 v. scale; Screen-Grid Voltages on the 100 v. scale

Plate Voltage	100 v.	100 v.	85 v.	100 v.	100 v.
Control-Grid Voltage	-0.6	-0.6	-0.5	0.35	12
Screen-Grid Voltage	68	68	10		
Plate Current	2.5 m.a.	2.5 m.a.	0.8 m.a.	4 m.a.	15 m.a.

2AF '45
2AF '45
1AF '27
DET. '24

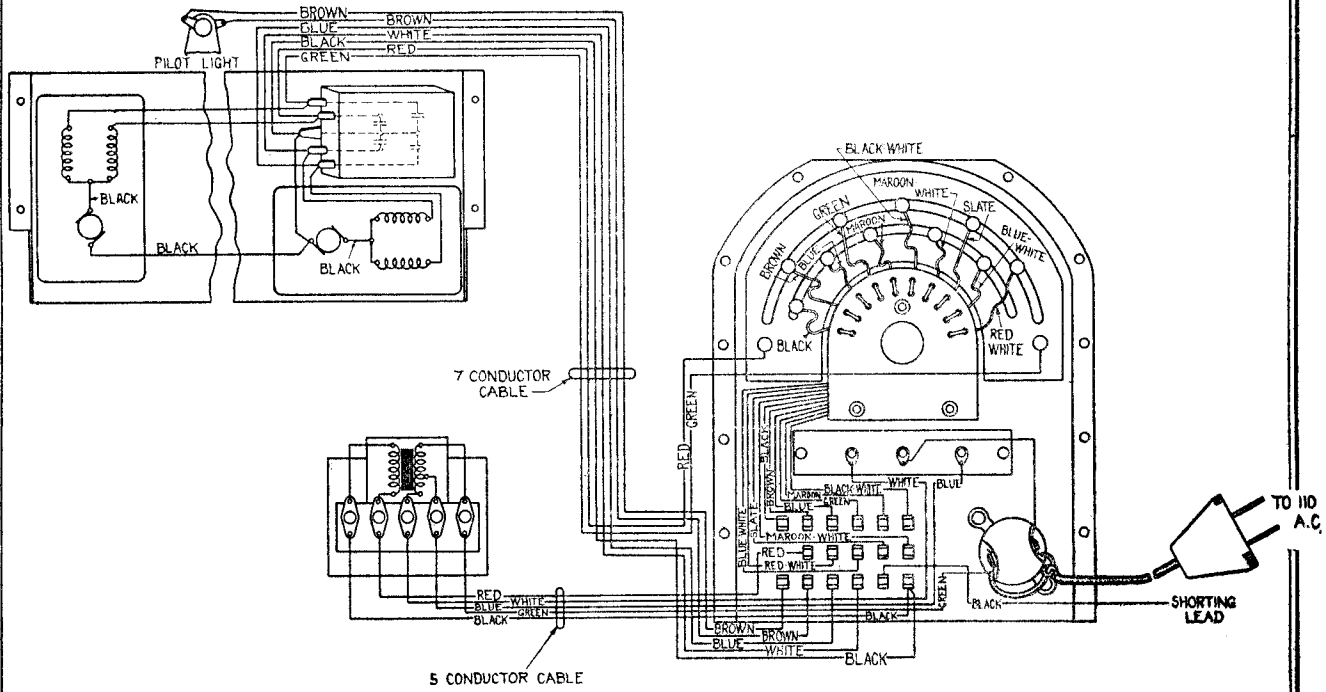
1RF '24
2RF '24

FRONT

5 AMP 105V FUSE
Brown - R4, R5, R6, R8, R9, R11
Red - R2, R3, R10
Black wire wound R7
Yellow R12

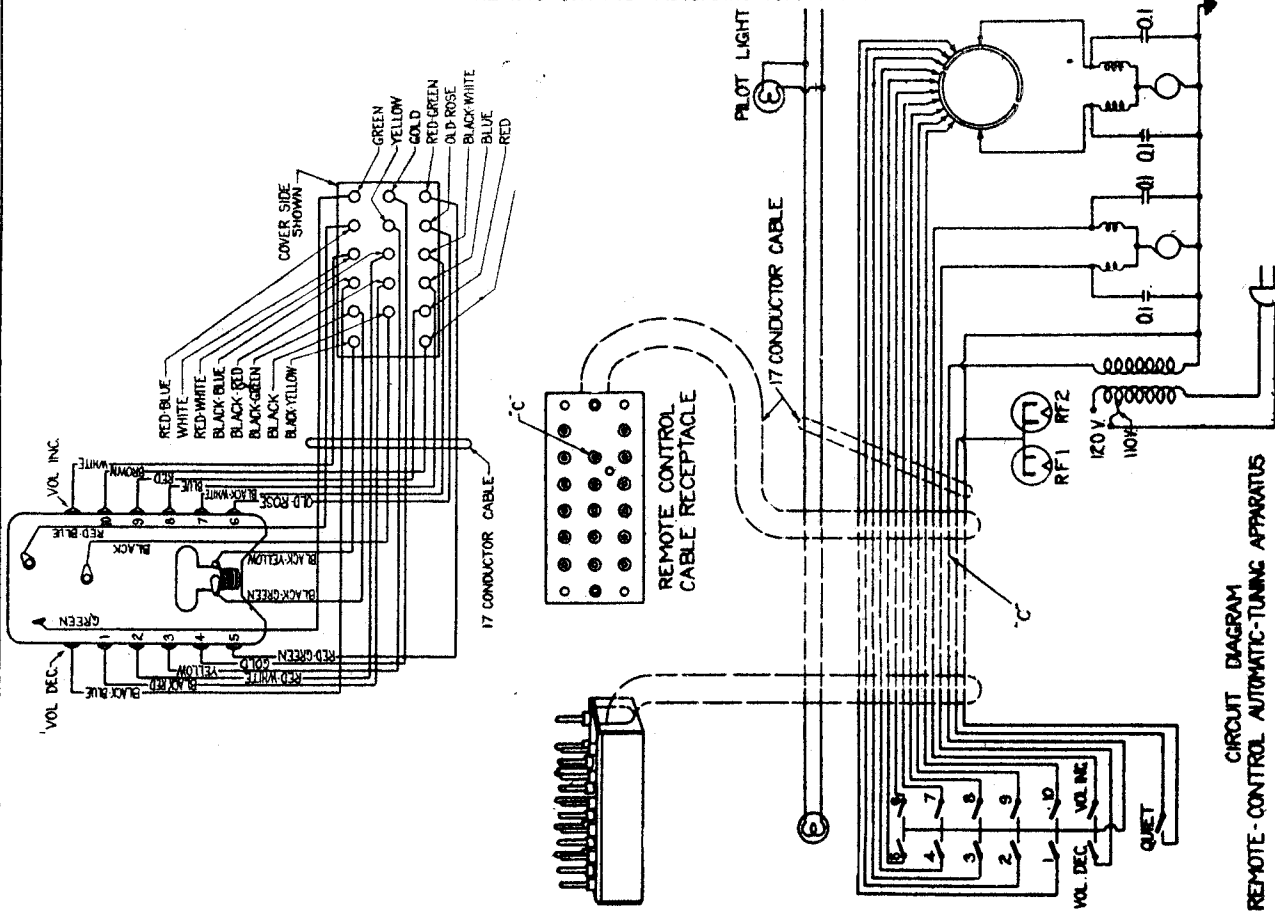
COLONIAL RADIO CORP.

MODEL 33,34,35 AC
Remote Control
Schematic



WIRING DIAGRAM

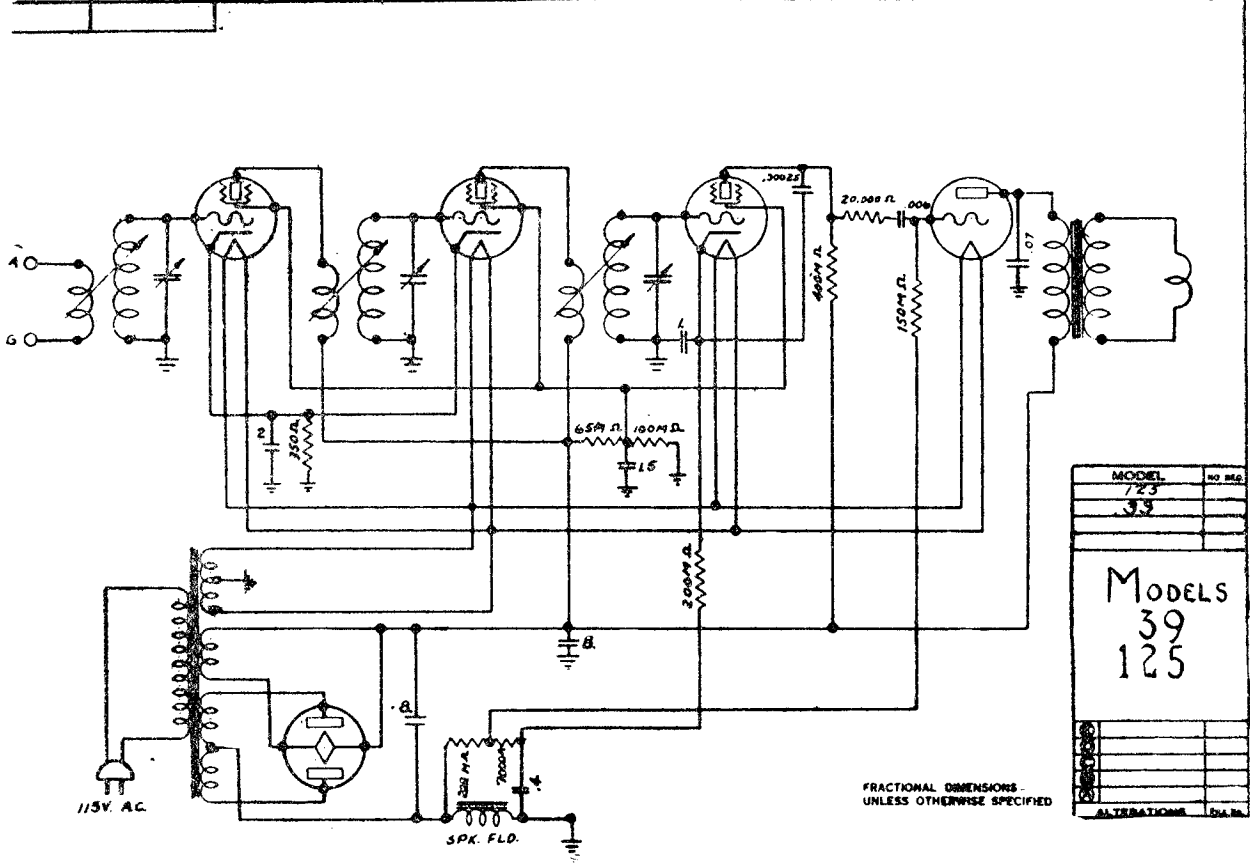
REMOTE-CONTROL AUTOMATIC-TUNING UNIT



CIRCUIT DIAGRAM
REMOTE-CONTROL AUTOMATIC-TUNING APPARATUS

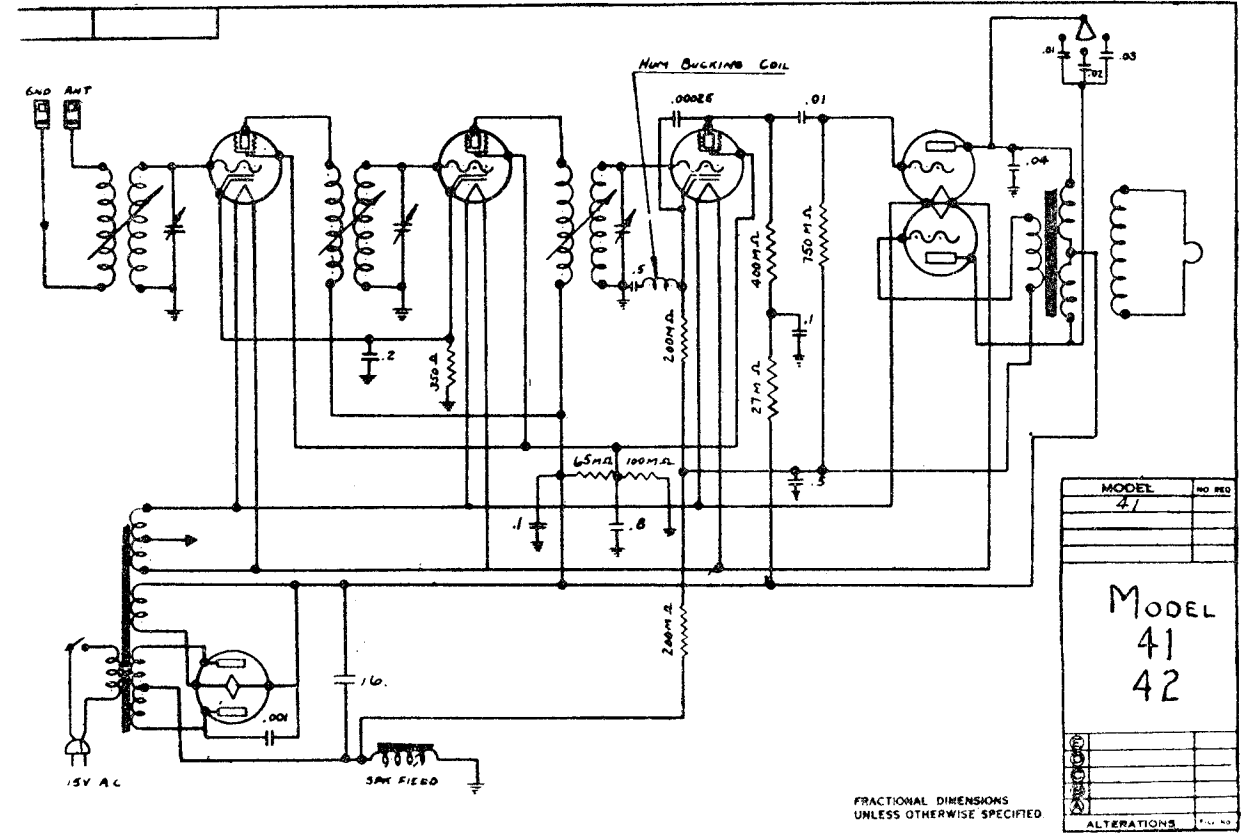
MODEL 39, 125
MODEL 41, 42
Schematics

COLONIAL RADIO CORP.



MODEL	NO. REQ.
723	
33	
MODELS 39 125	
ALTERATIONS	DATE

FRACTIONAL DIMENSIONS UNLESS OTHERWISE SPECIFIED

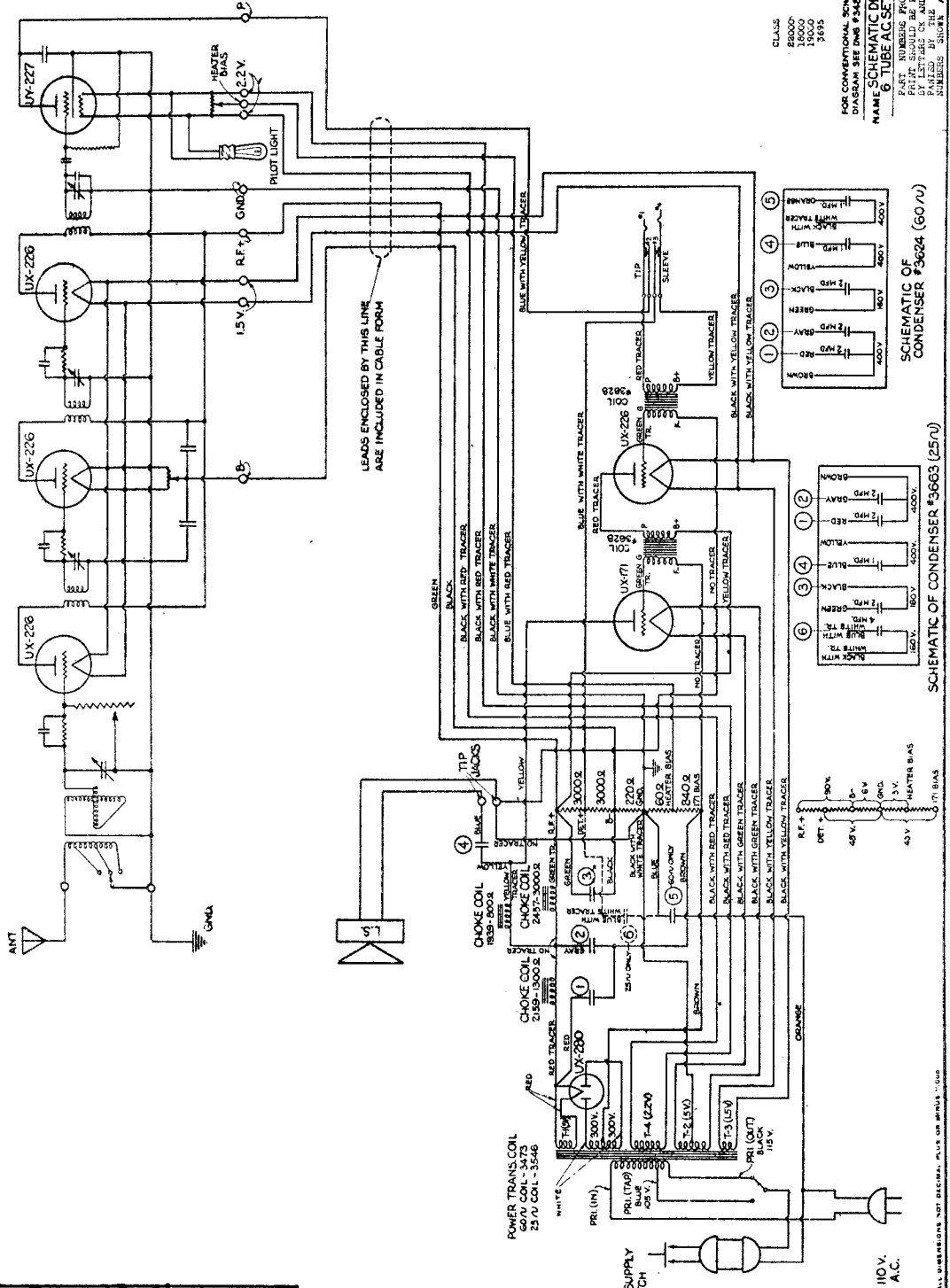


MODEL	NO. REQ.
41	
MODEL 41 42	
ALTERATIONS	DATE

FRACTIONAL DIMENSIONS UNLESS OTHERWISE SPECIFIED

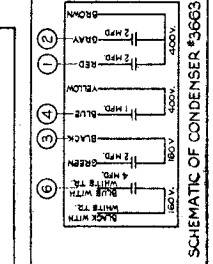
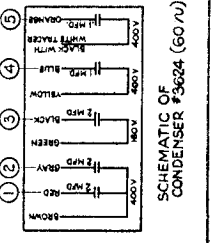
COLUMBIA PHONOGRAPH COMPANY

MODEL C-1, C-3
Schematic



FOR CONVENTIONAL SCHEMATIC DIAGRAM SEE DWG #348E
NAME SCHEMATIC DIAGRAM OF 6 TUBE AC SET (60 V & 25 W)
PART NUMBERS FROM THIS PRINT SHOULD BE PREPARED BY THE DRAWING NUMBERS SHOWN AT TOP.

CLASS
28000
18000
19000
9495

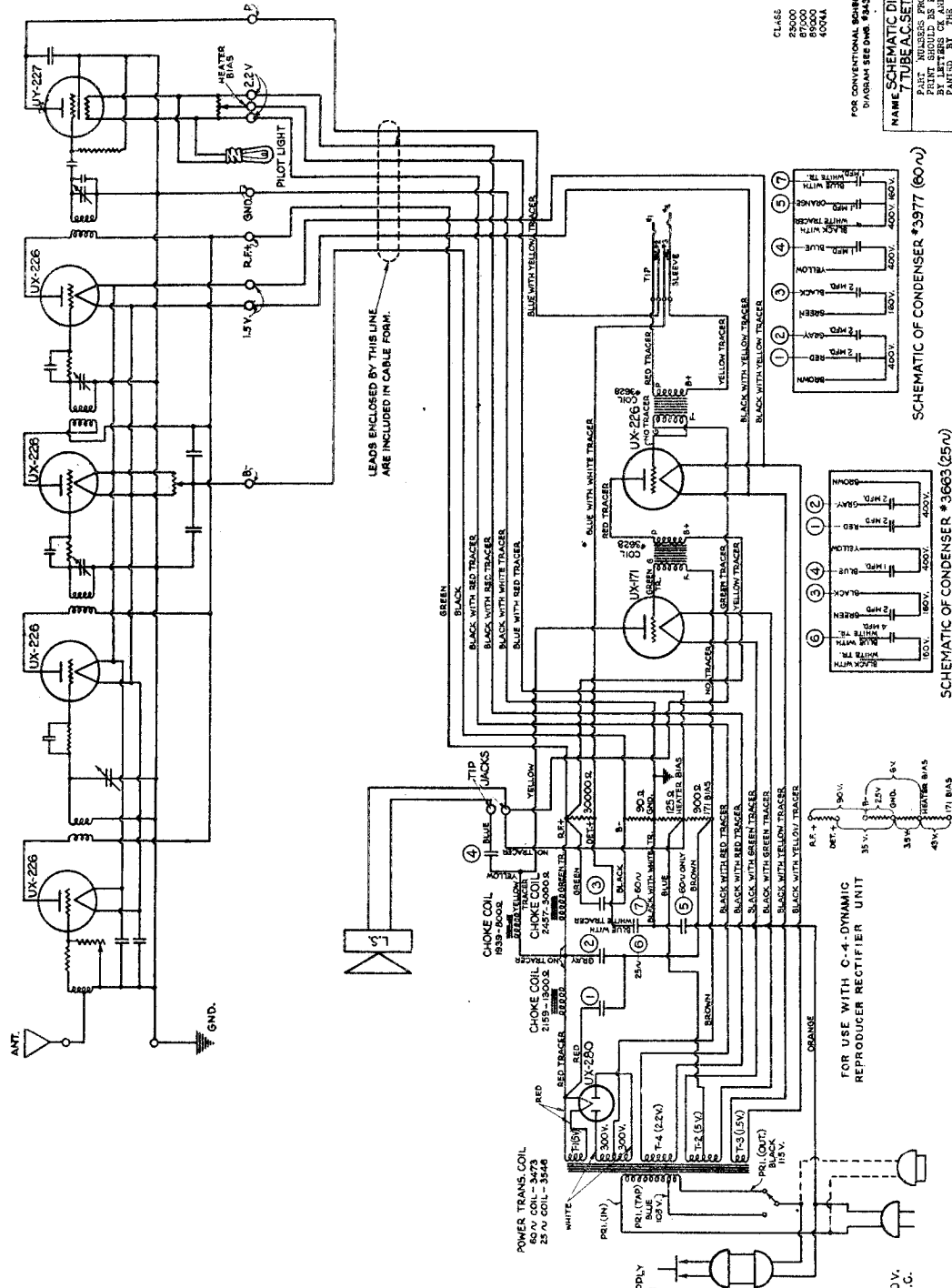


C-1, C-3			
CX-380 Rect.		CX-371A 2nd A.F.	CX-326 1st A.F.
CX-326 1st R.F.	CX-326 2nd R.F.	CX-326 3rd B.F.	C-327 Det.

NOTE: ALL DIMENSIONS NOT SHOWN, PLUS OR MINUS .005

MODEL C-2, C-4
Schematic

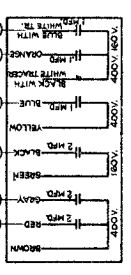
COLUMBIA PHONOGRAPH COMPANY



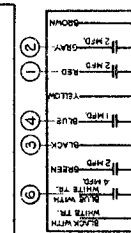
CLASS
25000
87000
90000
40004

FOR CONVENTIONAL SCHEMATIC
DIAGRAM SEE DWS #2433

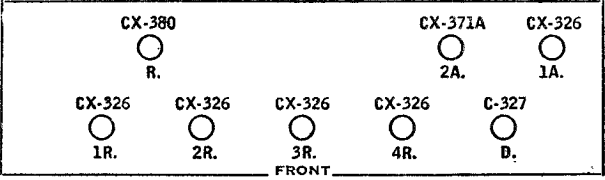
NAME SCHEMATIC DIAGRAM OF
7 TUBE A.C. SET (60/25V)
PART NUMBERS FROM THIS
SCHEMATIC SHOULD BE
PRINTED BY THIS DRAWING
ANALYSIS SHOWN AT TOP.



SCHEMATIC OF CONDENSER #3977 (60V)



SCHEMATIC OF CONDENSER #3663 (25V)

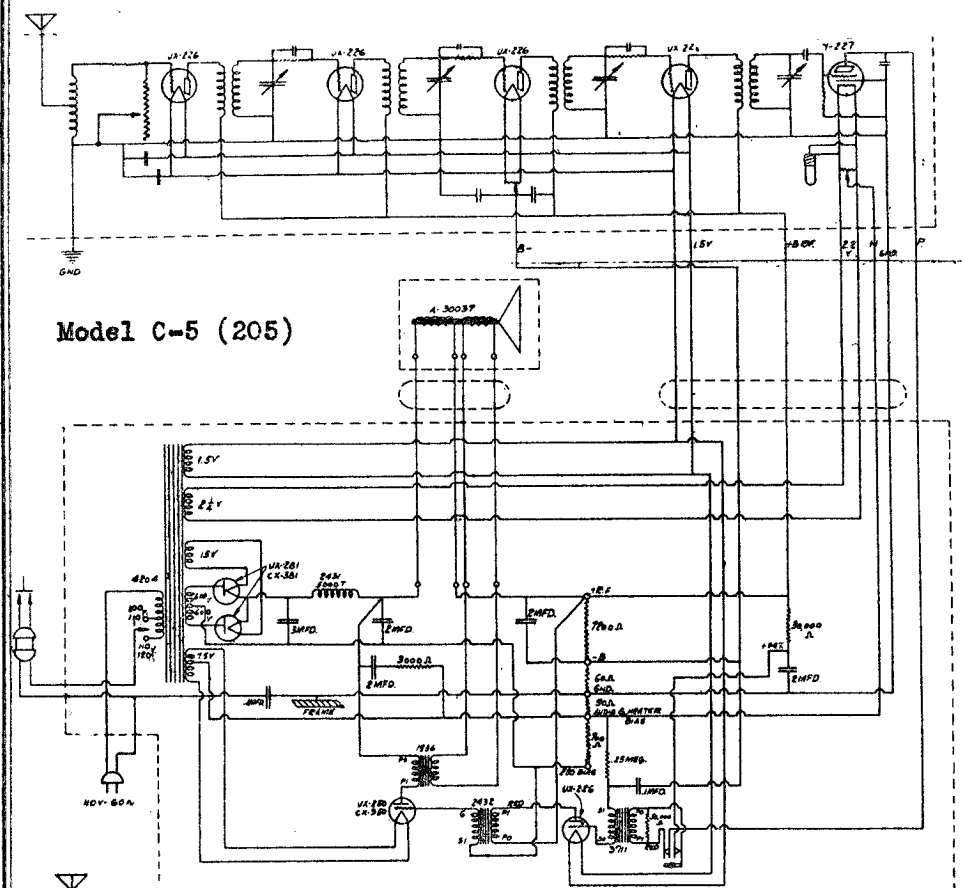


*This Model Uses a CX-381 Also for the Dynamic Speaker Field Supply.

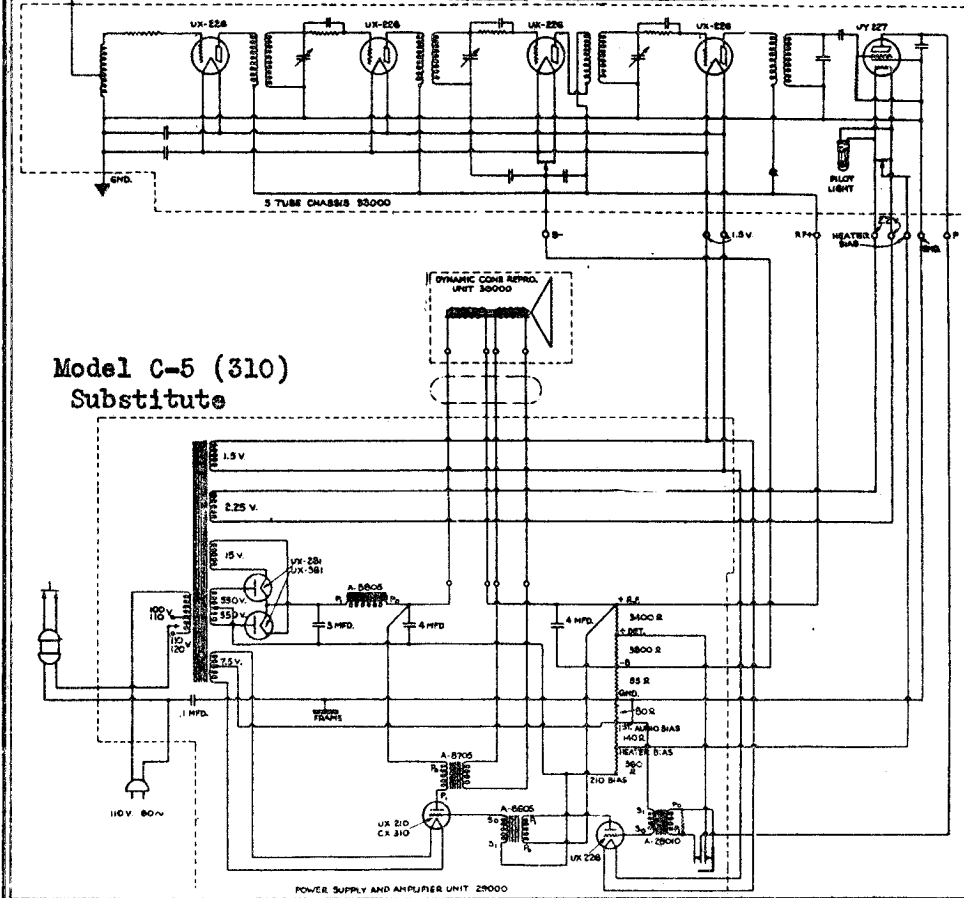
SEE ALL DIMENSIONS NOT DECIMAL PLUS OR MINUS .0005

COLUMBIA PHONOGRAPH COMPANY

MODEL C-5 (205)
MODEL C-5 (310)
Schematic
Voltage
Socket



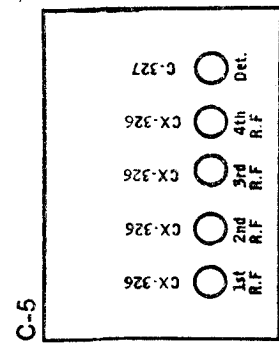
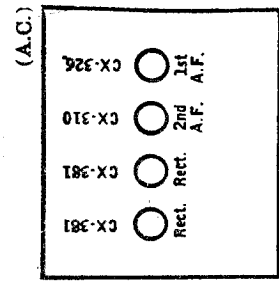
Model C-5 (205)



Model C-5 (310)
Substitute

Line Voltage 116

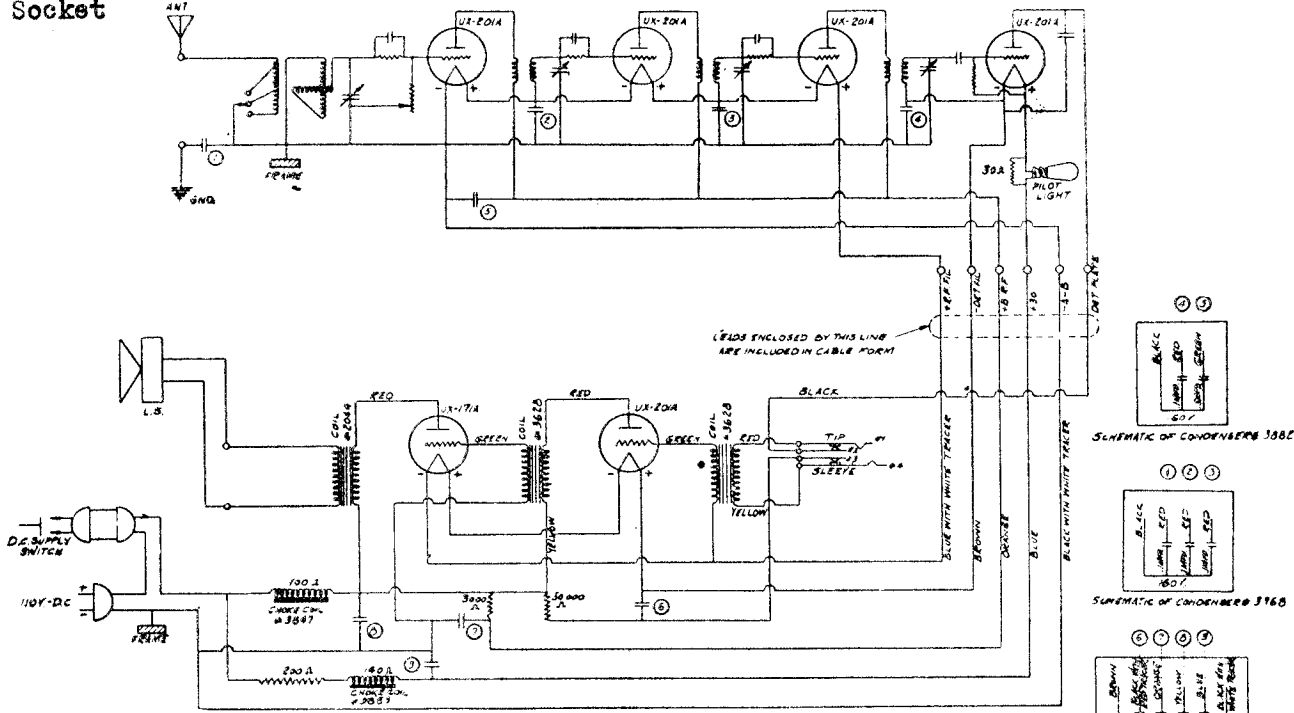
TUBE NO. IN CHASSIS	TUBE TYPE	POSITION OF TUBE IN CHASSIS	TUBE OUT		TUBE IN TESTER		PLATE CHARACTERISTICS	
			VOLTS	AMPS	VOLTS	AMPS	PLATE VOLTS	PLATE CURRENT MA
1	226	1st. R.F. A.F.	90	1.4	225	5.8	5.8	4.0
2	226	2nd. R.F. A.F.	90	1.4	225	5.8	5.8	4.0
3	226	3rd. R.F. A.F.	90	1.4	225	5.8	5.8	4.0
4	226	4th. R.F. A.F.	90	1.4	225	5.8	5.8	4.0
5	227	DET. A.F.	44	2.0	35	1.6	1.6	3.0
6	210	2nd. A.F.	512	7.4	430	24.5	24.5	3.0
7	231	Rect.	-	7.0	-	25.0	-	-
8	231	Rect.	-	7.0	-	25.0	-	-



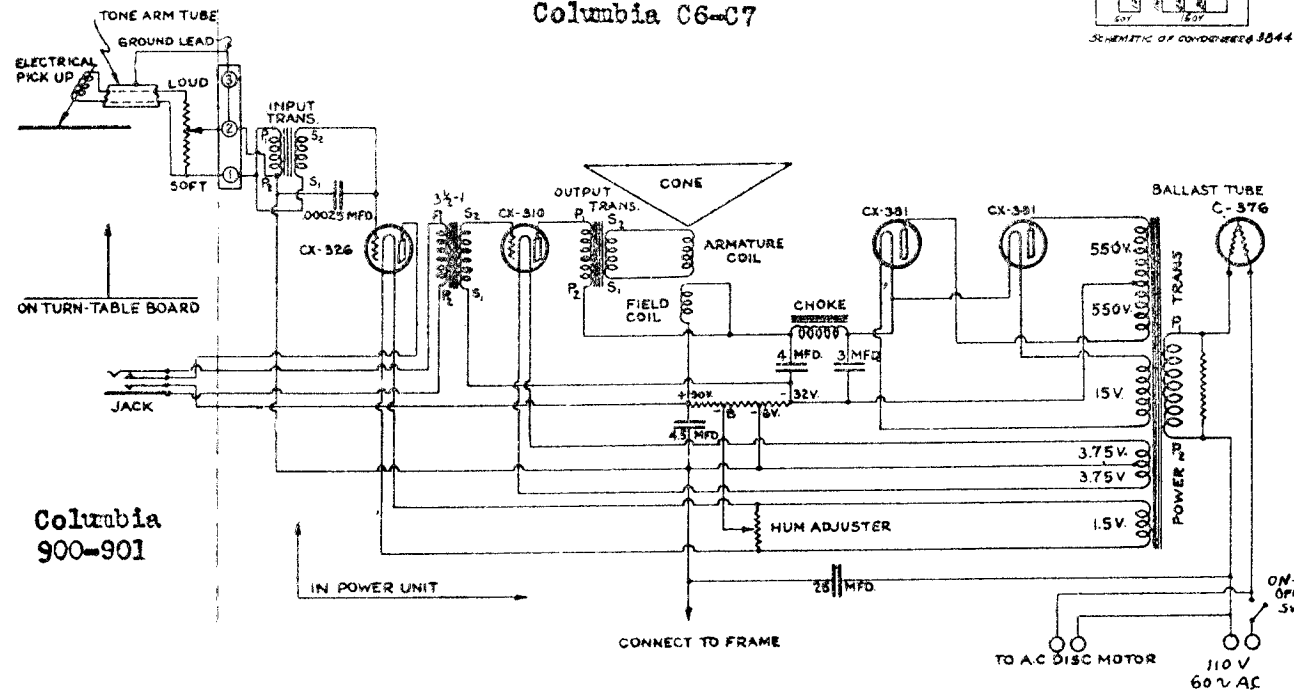
POWER SUPPLY AND AMPLIFIER UNIT 29000

MODEL C-6, C-7
 MODEL 900,901
 Schematic
 Socket

COLUMBIA PHONOGRAPH COMPANY



Columbia C6-C7



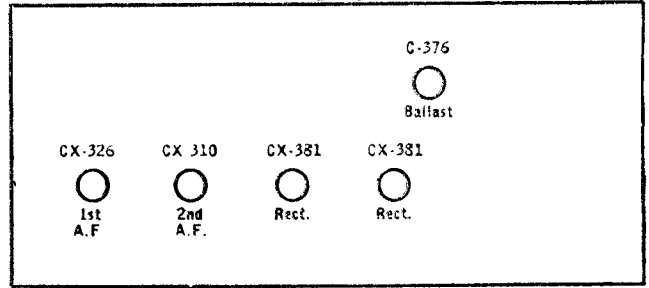
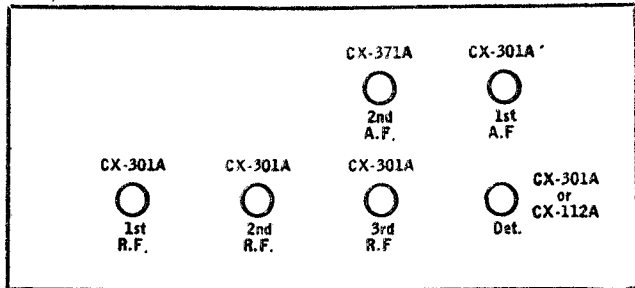
Columbia
 900-901

C-6, C-7

(D.C.)

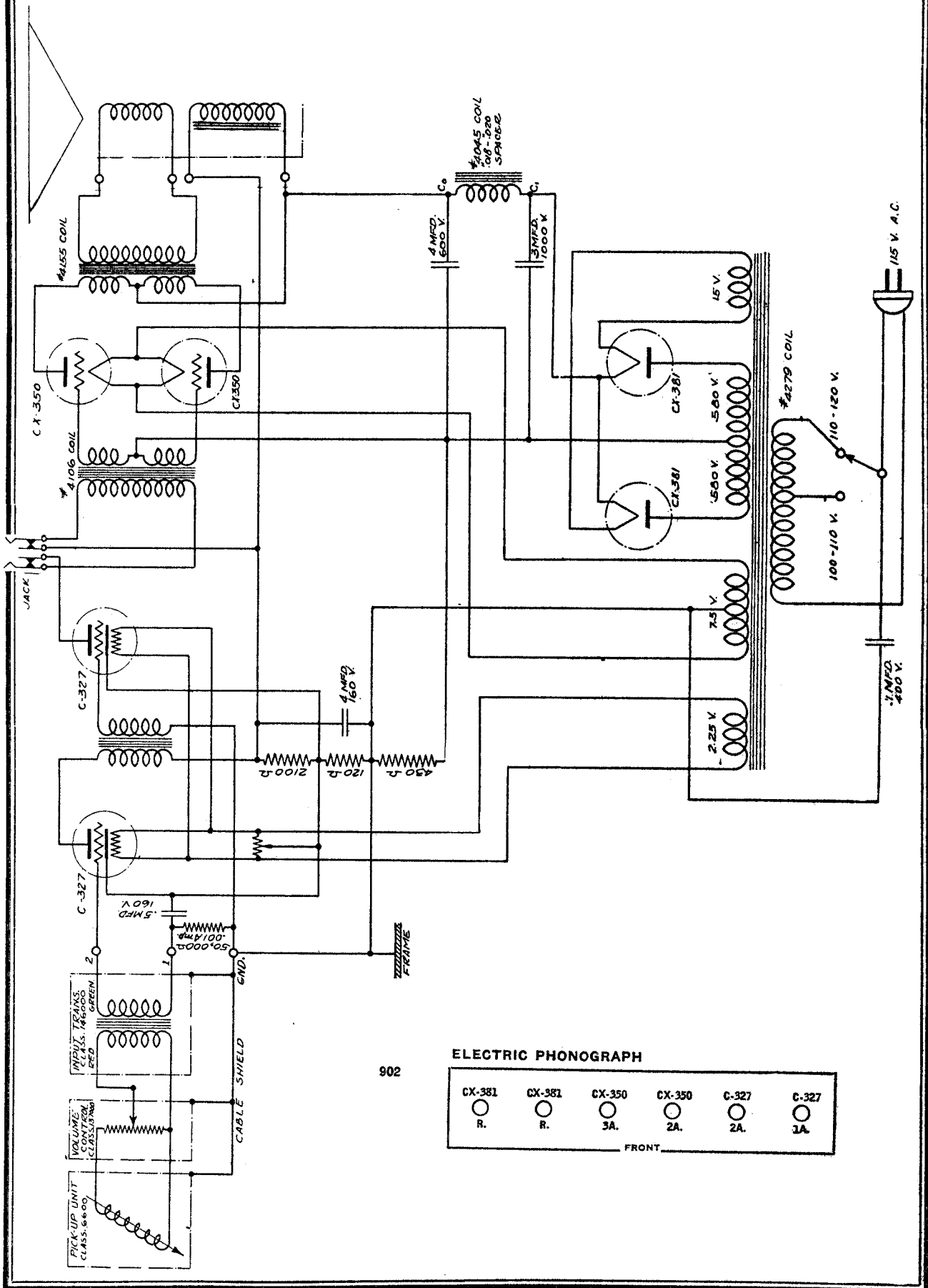
900, 901 Electric Phonograph

(A.C.)



COLUMBIA PHONOGRAPH COMPANY

MODEL 902
Schematic



902

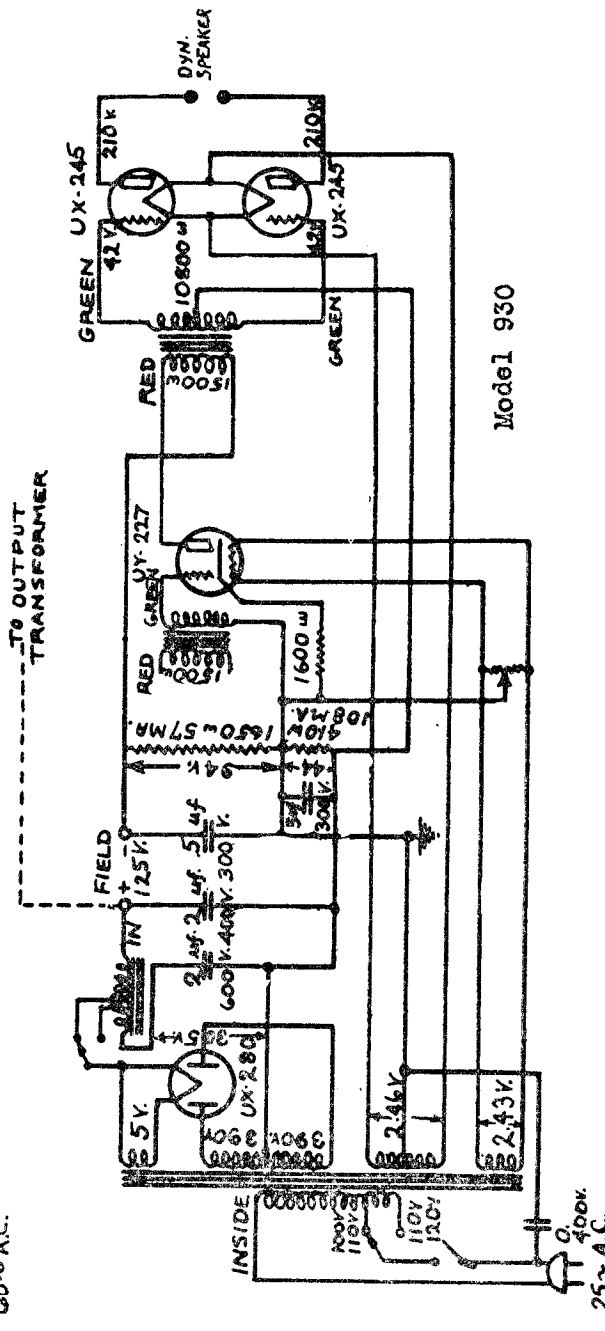
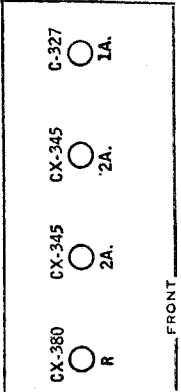
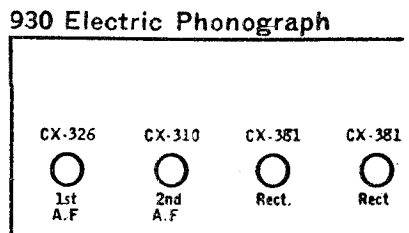
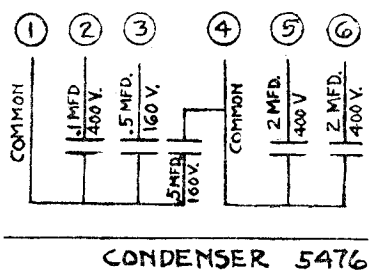
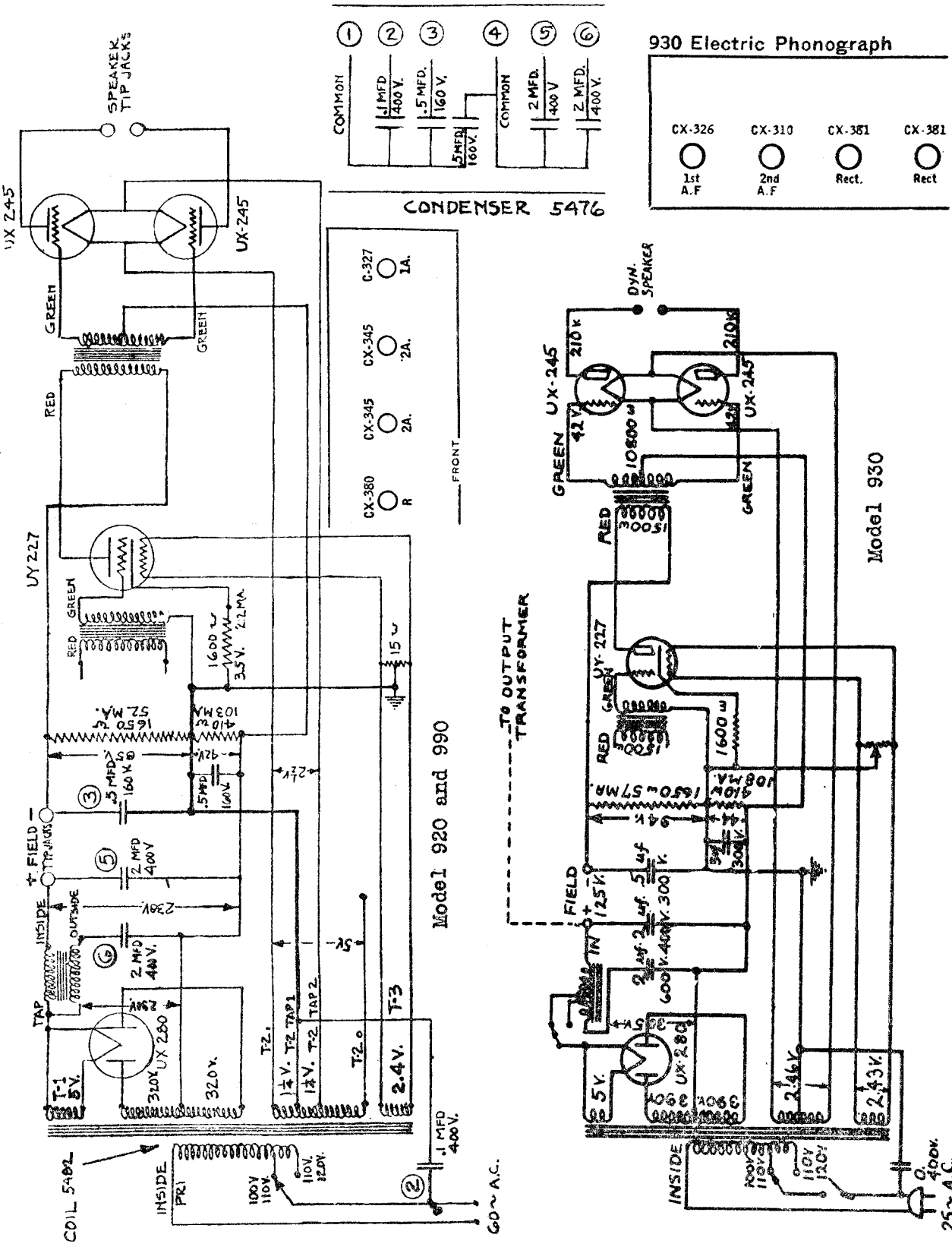
ELECTRIC PHONOGRAPH

CX-381	CX-381	CX-350	CX-350	C-327	C-327
R.	R.	3A.	2A.	2A.	1A.

FRONT

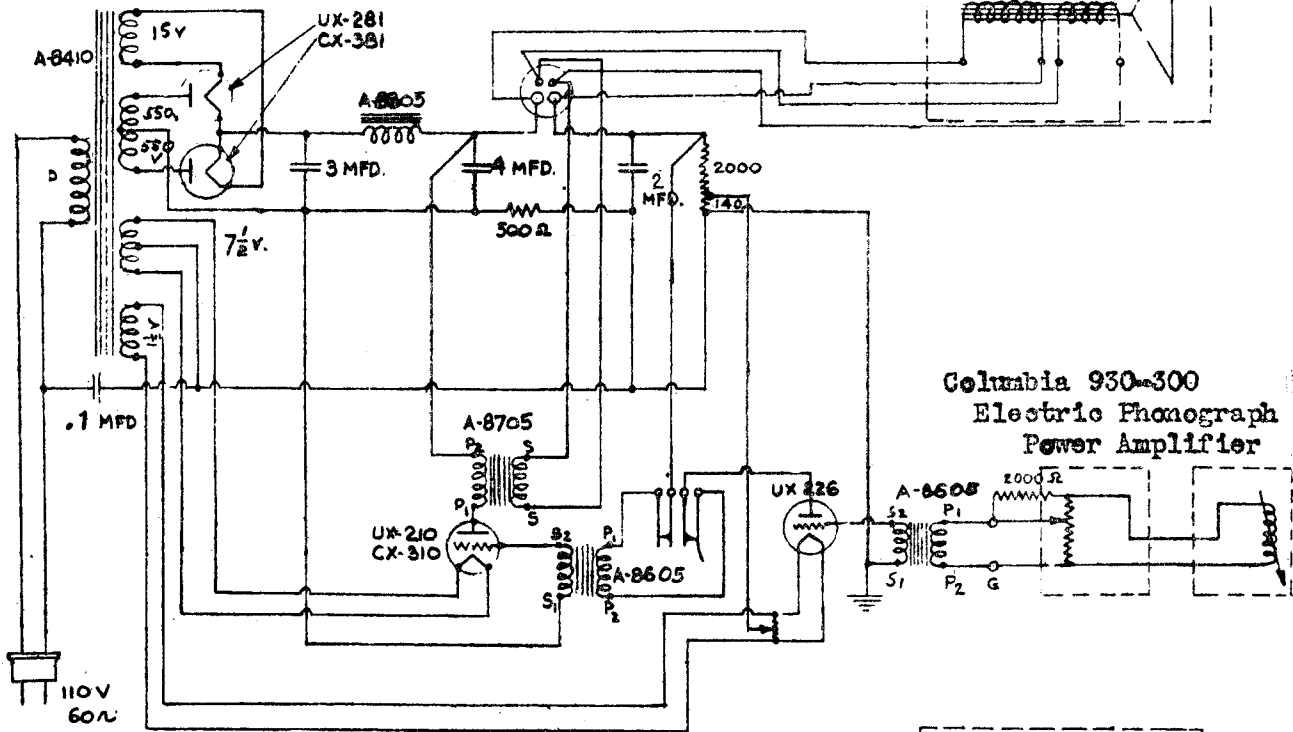
MODEL 920
 MODEL 930
 MODEL 990
 Schematic

COLUMBIA PHONOGRAPH COMPANY

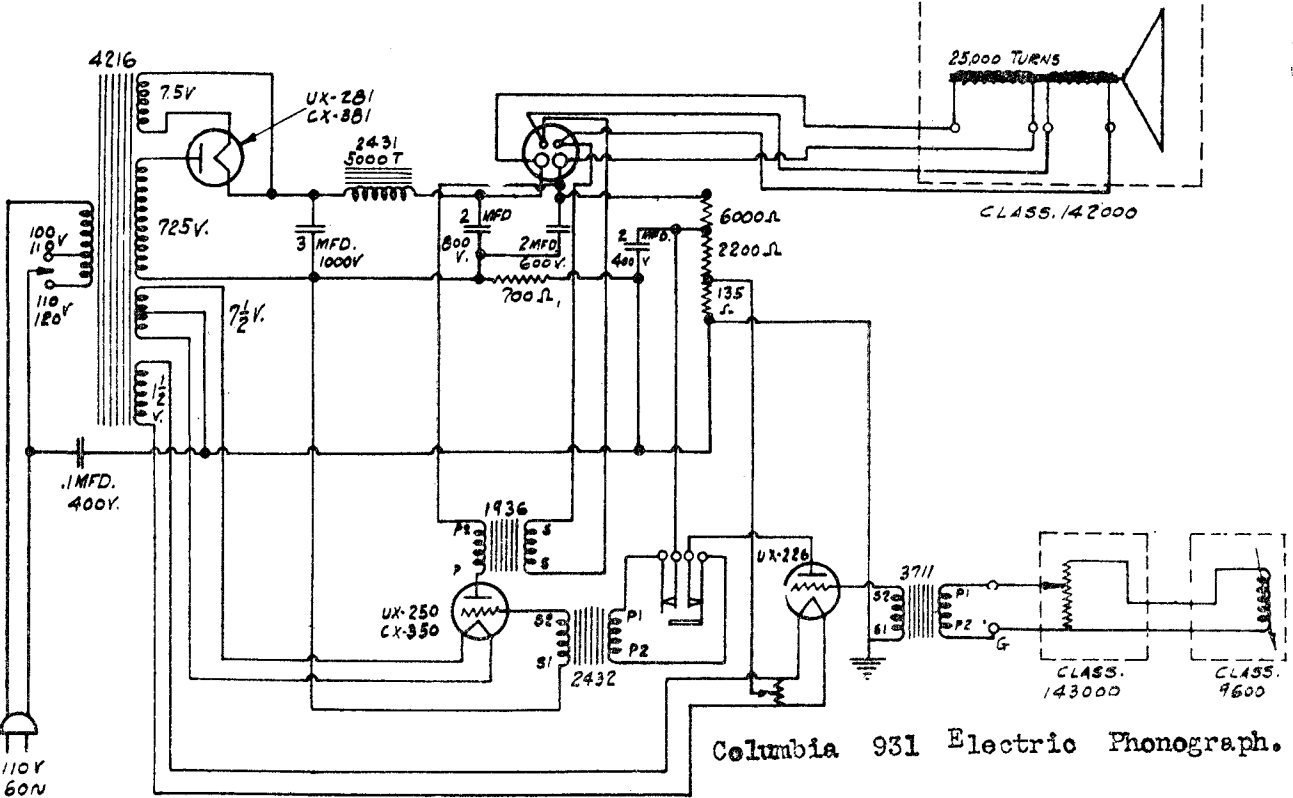


COLUMBIA PHONOGRAPH COMPANY MODEL 930-300

MODEL 931
Schematic
A-8137

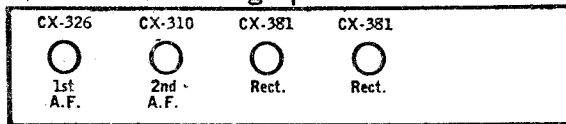


Columbia 930-300
Electric Phonograph
Power Amplifier

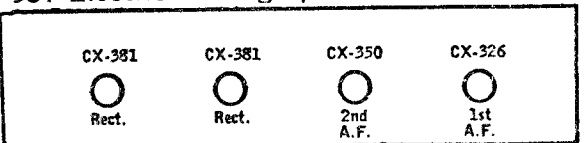


Columbia 931 Electric Phonograph.

930 Electric Phonograph (A.C.)

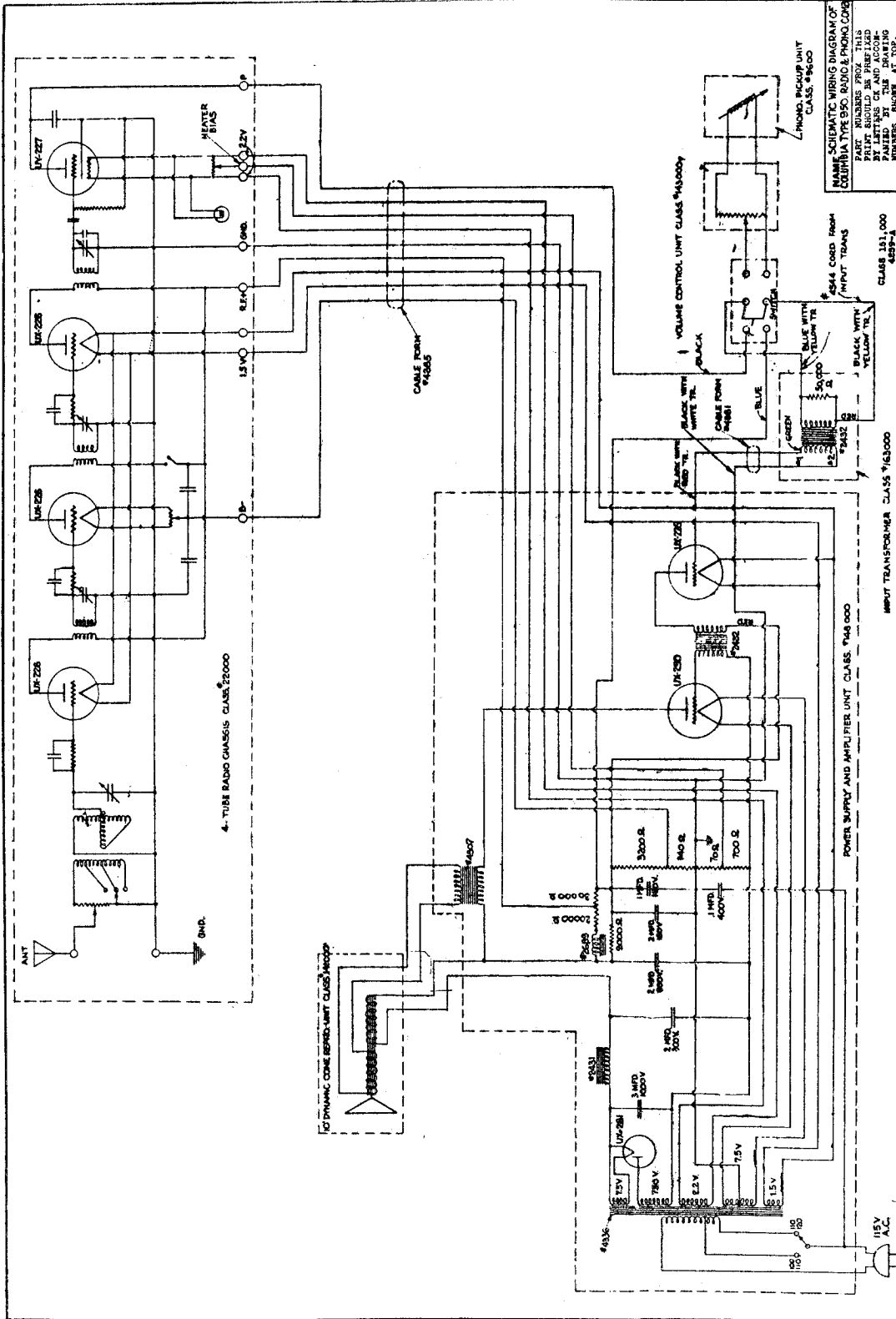


931 Electric Phonograph (A.C.)



COLUMBIA PHONOGRAPH COMPANY

MODEL 950
Schematic



CX-381	950	CX-350	CX-326
R.		2A.	1A.
CX-326	CX-326	CX-326	C-327
1R.	2R.	3R.	D.
FRONT			

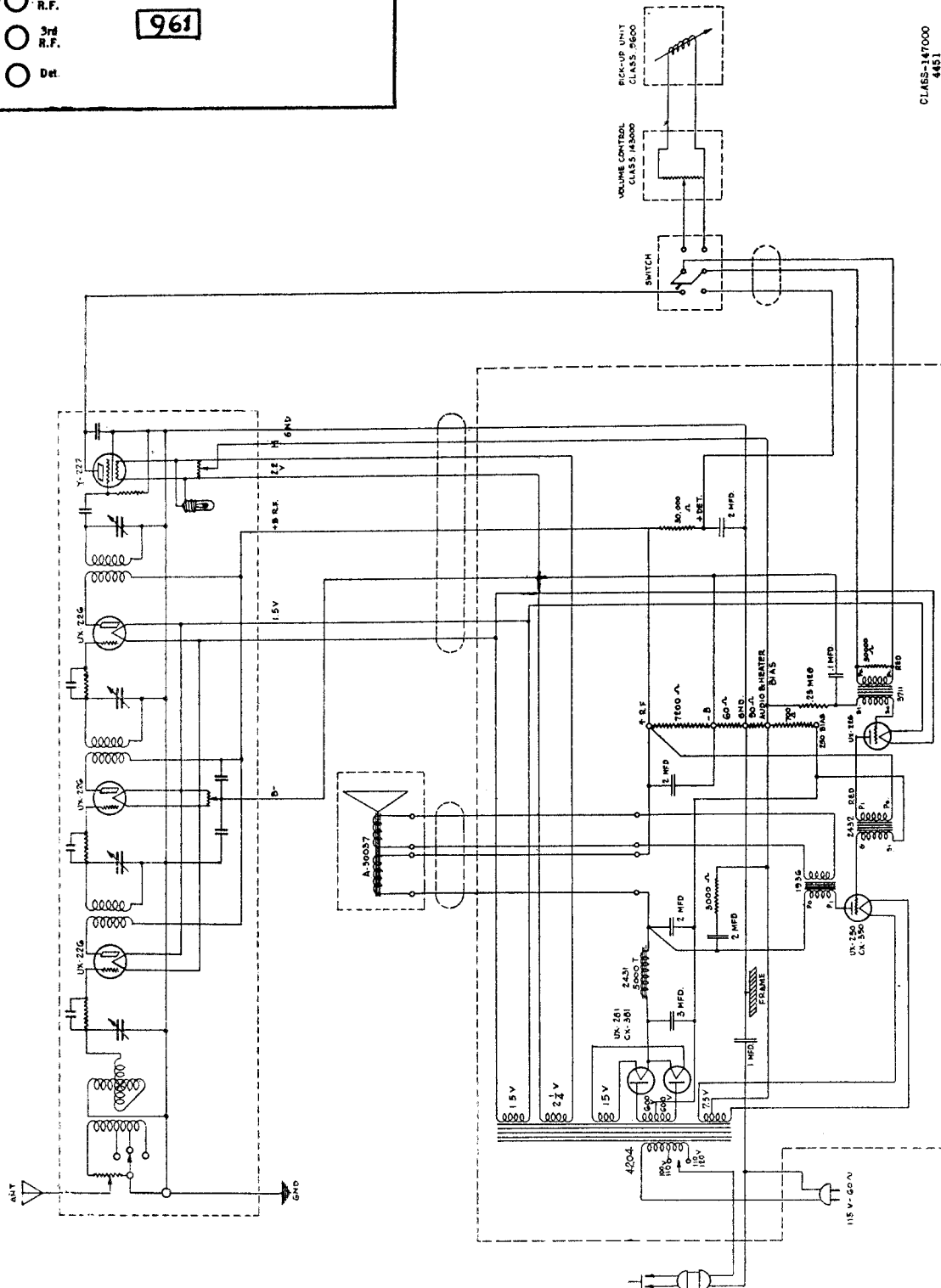
MODEL 961

COLUMBIA PHONOGRAPH COMPANY

Chassis	CX-381	CX-381	CX-350	CX-326
CX-326	○ 1st R.F.	○ Rect.	○ 2nd A.F.	○ 1st A.F.
CX-326	○	○	○	○
CX-326	○	○	○	○
C-327	○	○	○	○

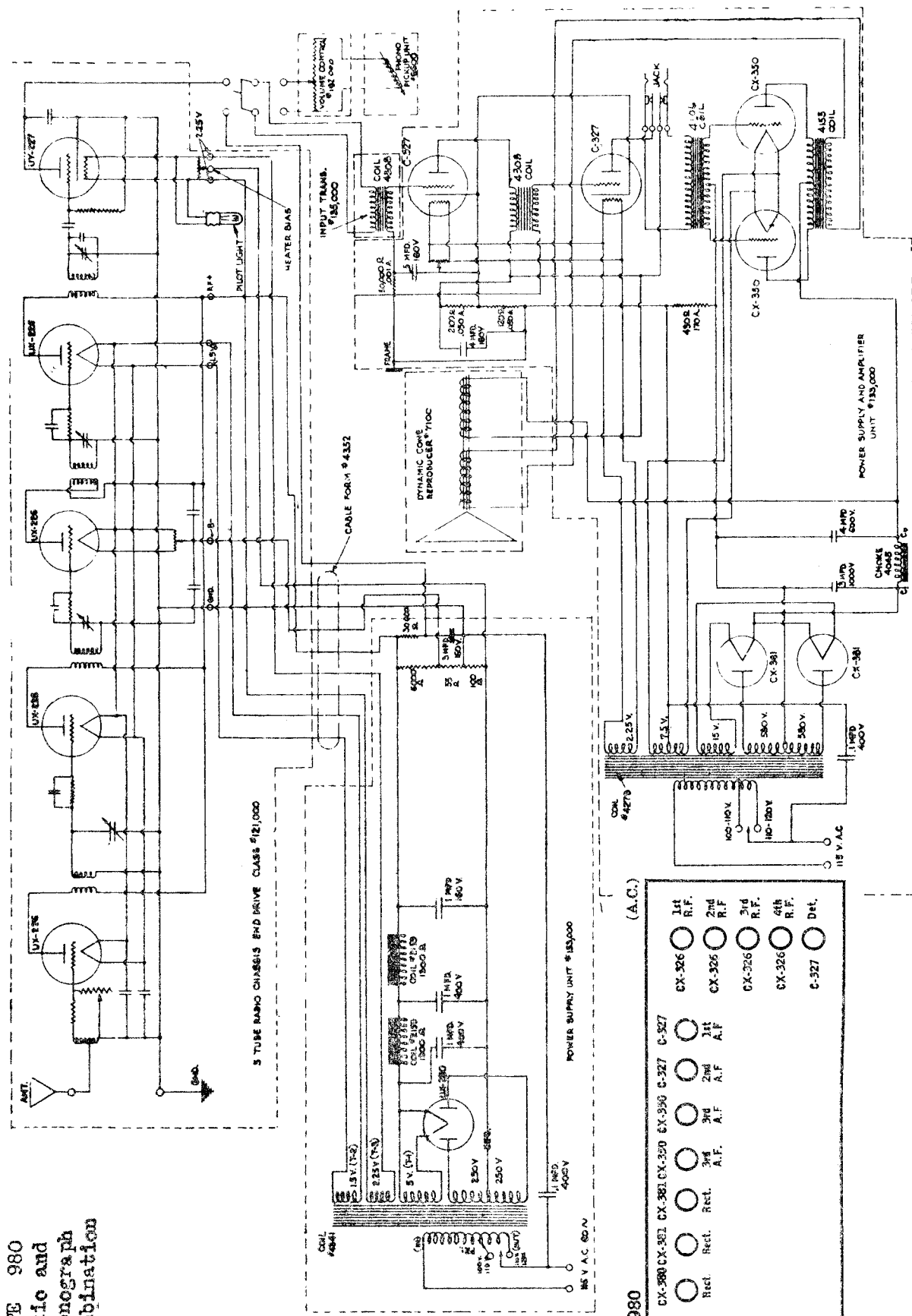
961

CLASS-147000
4451



COLUMBIA PHONOGRAPH COMPANY

MODEL 980



TYPE 980
Radio and
Phonograph
Combination

980

(A.C.)

○	Rect.	CX-381	1st A.F.
○	Rect.	CX-382	2nd A.F.
○	Rect.	CX-383	3rd A.F.
○	Rect.	CX-384	4th A.F.
○	Rect.	CX-385	5th A.F.
○	Rect.	CX-386	6th A.F.
○	Rect.	CX-387	7th A.F.
○	Rect.	CX-388	8th A.F.
○	Rect.	CX-389	9th A.F.
○	Rect.	CX-390	10th A.F.
○	Rect.	CX-391	11th A.F.
○	Rect.	CX-392	12th A.F.
○	Rect.	CX-393	13th A.F.
○	Rect.	CX-394	14th A.F.
○	Rect.	CX-395	15th A.F.
○	Rect.	CX-396	16th A.F.
○	Rect.	CX-397	17th A.F.
○	Rect.	CX-398	18th A.F.
○	Rect.	CX-399	19th A.F.
○	Rect.	CX-400	20th A.F.
○	Rect.	C-327	Det.

COLUMBIA RADIO CORPORATION

MODEL SG-8
Bottom View
#1

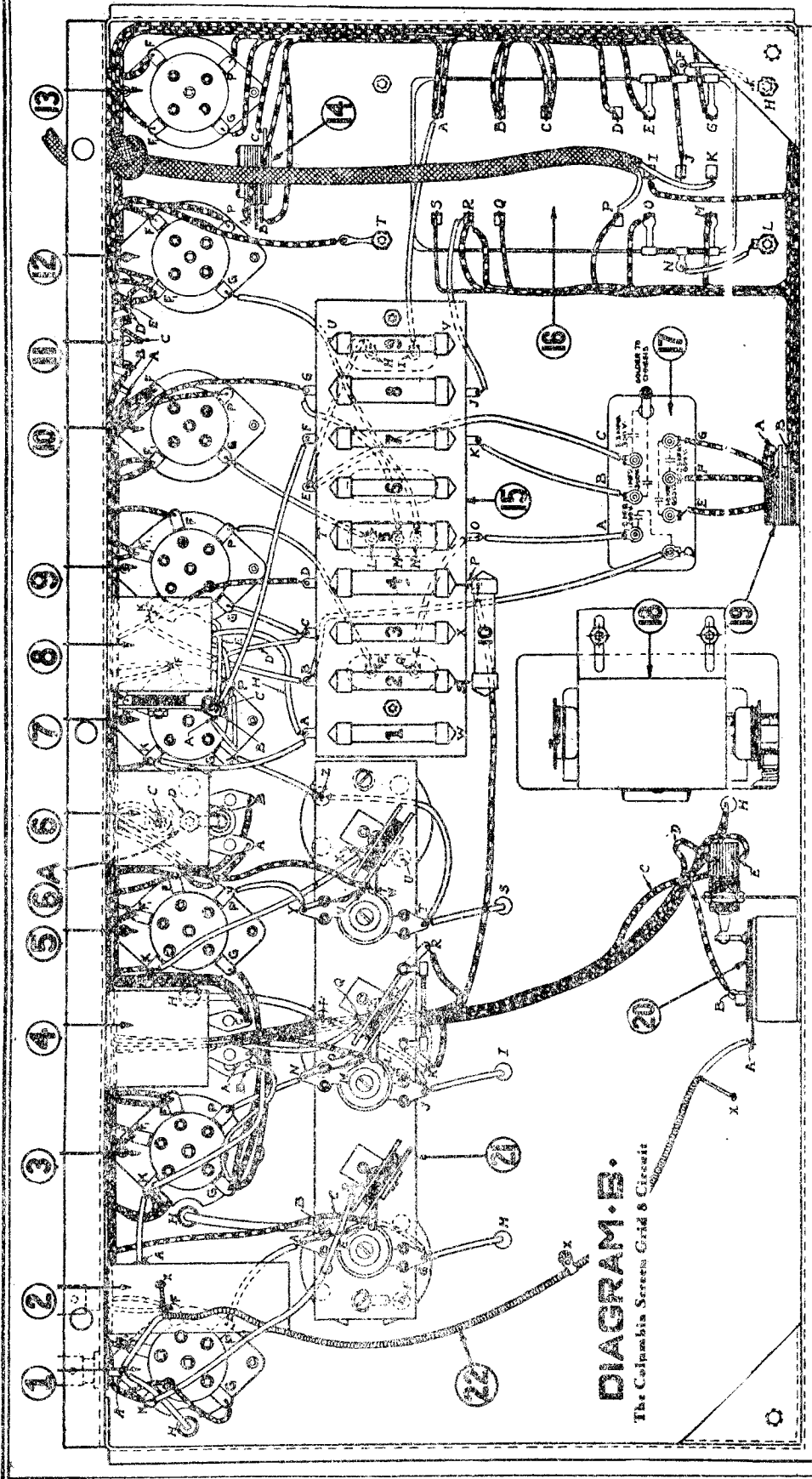


DIAGRAM B.
The Columbia Screen Grid & Circuit

MODEL SG-8 BOTTOM VIEW

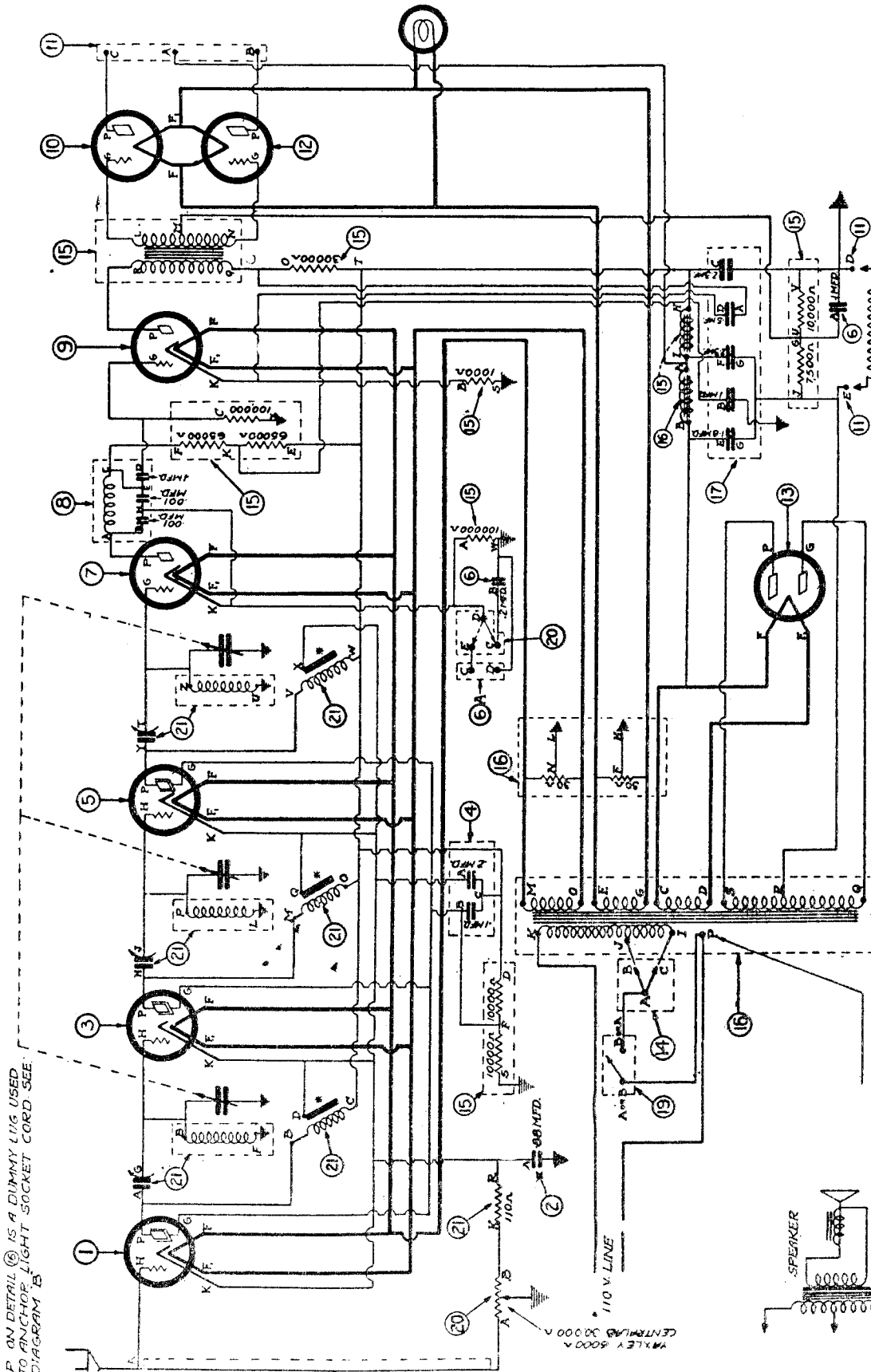
Readings, Plug In Socket Of Set

Tube No. In Order	Type Of Tube	Position of Tube 1st R.F. Det., Etc	Tube Out			Tube In Tester				Plate M.A. Test (11)	Plate Change M.A. (12)	Screen Grid Volts (13)
			A Volts (4)	B Volts (5)	A Volts (6)	C Volts (Control) (8) Grd. (9)	Normal Plate M.A. (19)	Cathode Heater Volts (9)	E Volts (2)				B Volts (2)
1	224	1st R.F.	2.45	180	2.4	1.5	4.5	6.7	2.2	80		
2	224	2nd R.F.	2.45	180	2.4	1.5	4.5	6.7	2.2	80		
3	224	3rd R.F.	2.45	180	2.4	1.5	4.5	6.7	2.2	80		
4	227	Det.	2.45	166	2.4	14.5	3.2	3.8	.6			
5	227	1st A.F.	2.45	162	2.4	3.	20	23	3.			
6	245	2nd A.F.	2.35	230	2.2	3.8	19	22	3.			
7	245	2nd A.F.	2.35	230	2.2	3.8	19	22	3.			

Line Voltage 115. Set on Low (1) Volt Tap. Volume Control Position Maximum

MODEL SG-8
Schematic

COLUMBIA RADIO CORPORATION

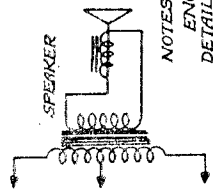


NOTES:-
ENCIRCLED NUMBERS INDICATE
DETAILS ON DIAGRAM B.
LETTERS INDICATE TERMINALS
ON DETAILS.
* INDICATES MOUNTING BRACKETS
ON DETAIL (2)

MODEL SG-8 (1930)

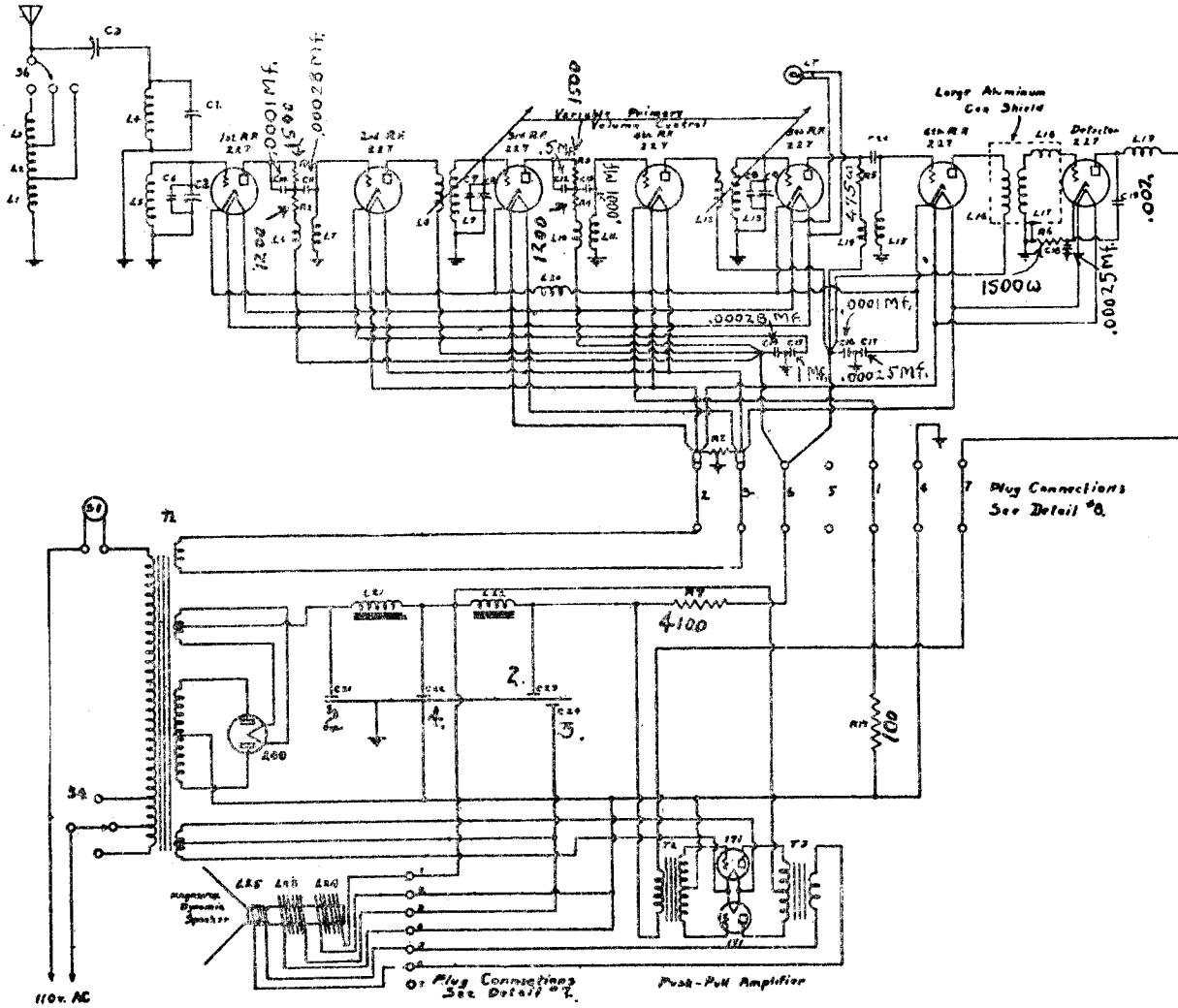
Detail 11 is the Loud-Speaker Socket.
Terminals D and E are the speaker field winding
* 1,000 ohms.

VOLTAGE DATA ON NEXT PAGE

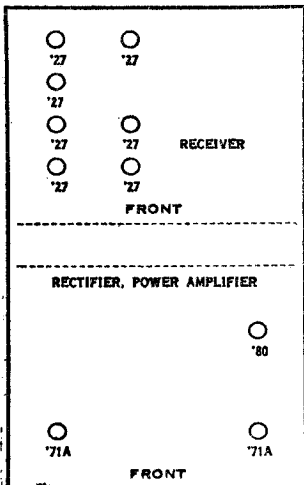


CONTINENTAL RADIO CORPORATION

MODEL "Slagle"
9 with
'71A's
Schematic



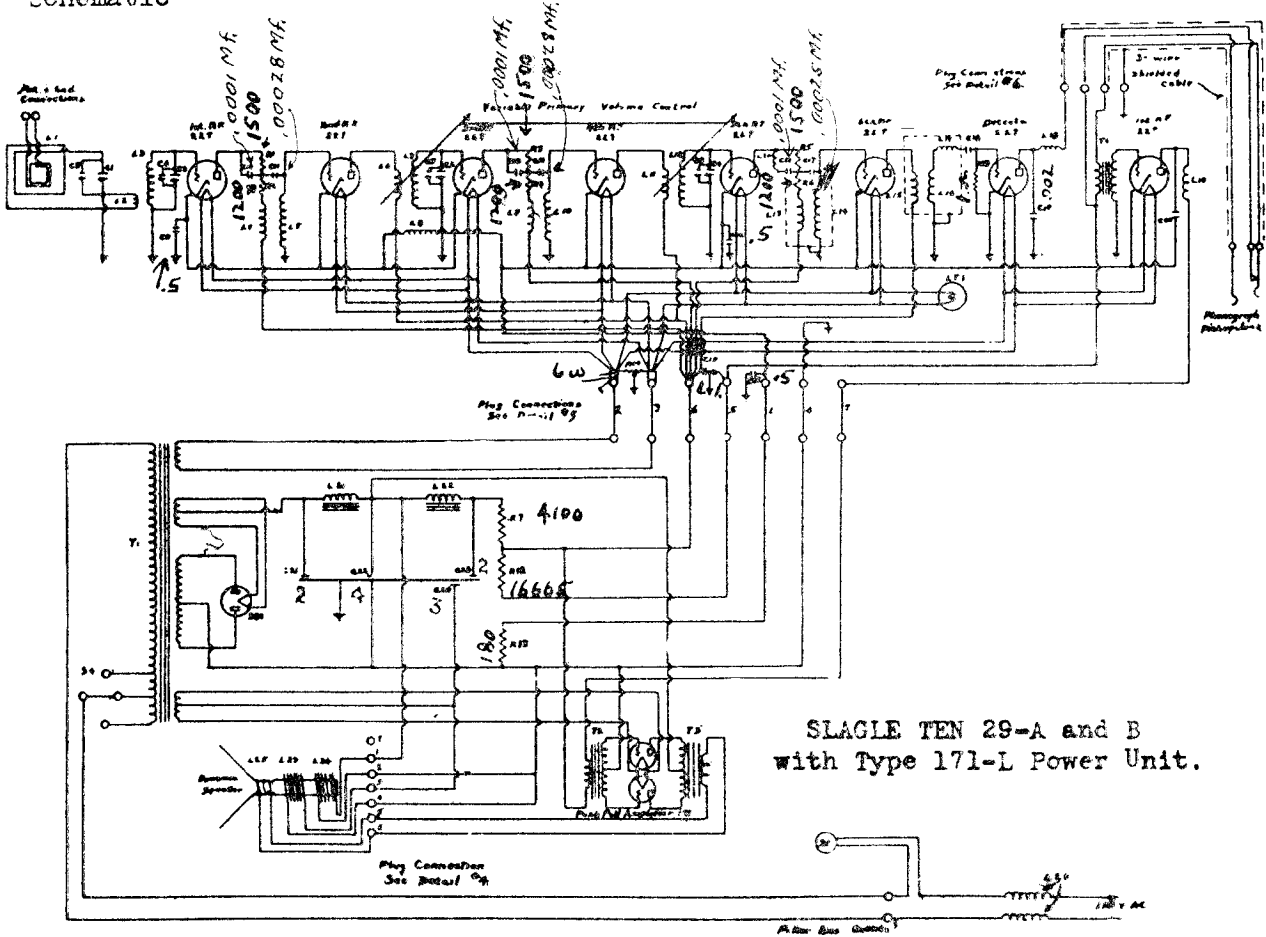
Model Slagle 9



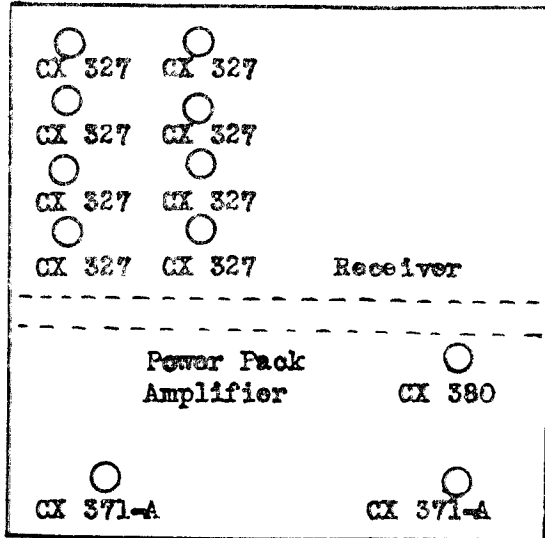
Tube	Fil. Voltage	Plate Voltage	Plate Current	Grid Voltage	Cathode Plus
RF1	2.15	80	4.5ma	3.	3.
RF2	2.15	88	5.3	3.	3.
RF3	2.15	80	4.0	3.	3.
RF4	2.15	88	5.3	3.	3.
RF5	2.15	80	4.5	3.	3.
RF6	2.15	89	4.6	3.	3.
Det	2.15	180	1.	20.	
PP1	4.9	172	17.	37.	
PP2	4.9	172	17	37.	
Rec	4.5				

MODEL "Slagle"
 10 29-A and
 B with '71A
 Power Pack.
 Schematic

CONTINENTAL RADIO CORPORATION

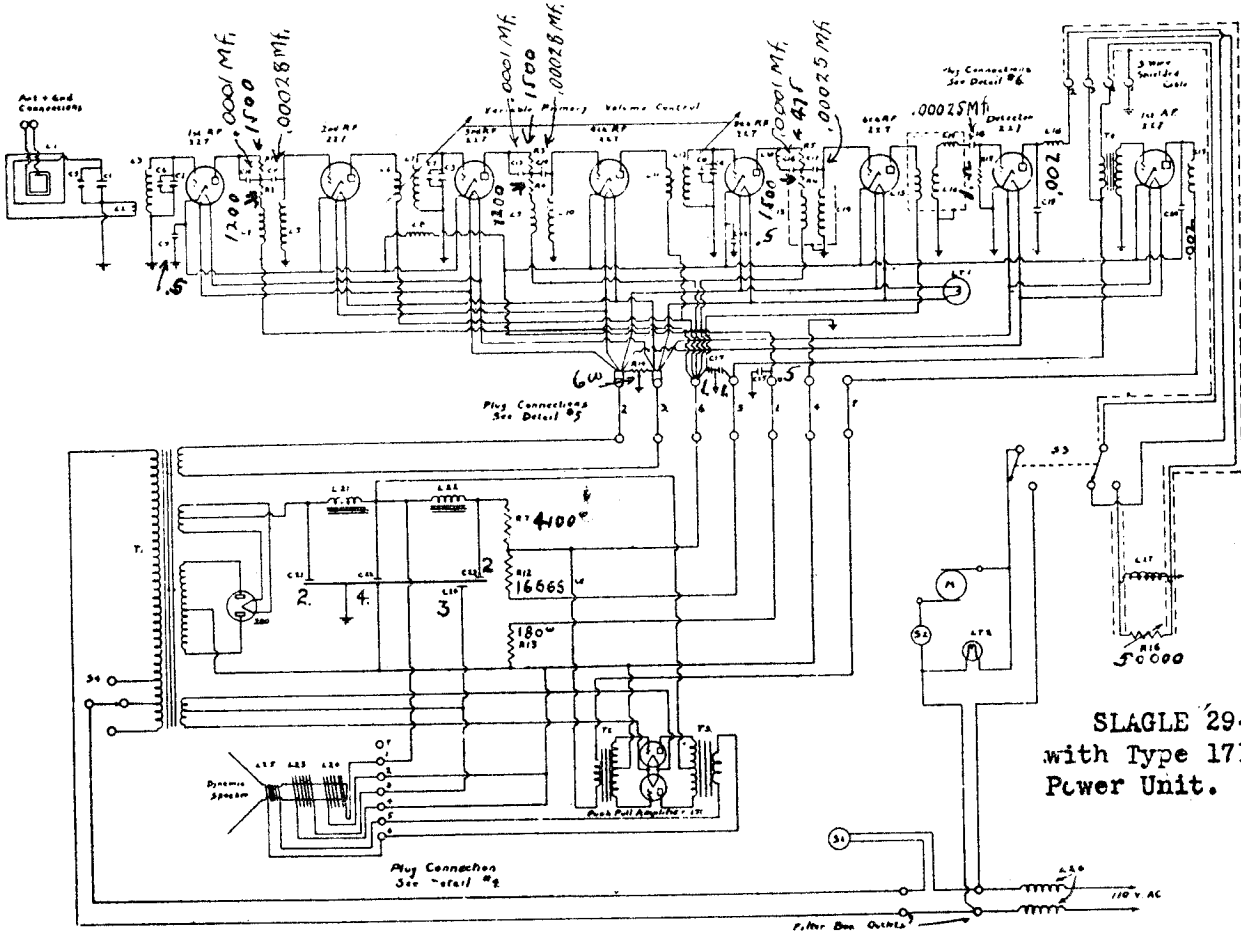


SLAGLE 29 A and B with '71 Pr.Pck.

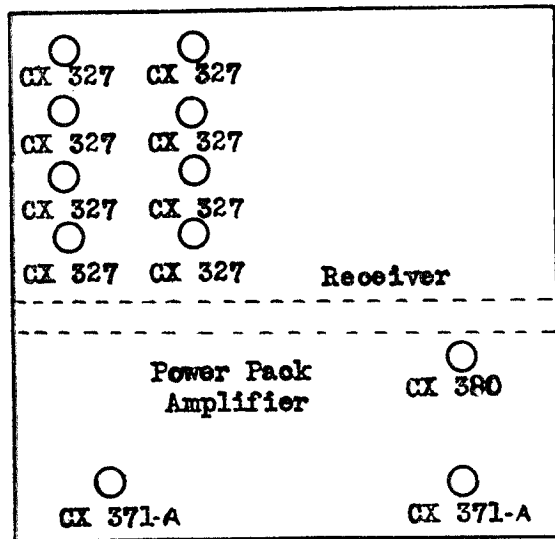


CONTINENTAL RADIO CORPORATION

MODEL "Slagle"
29-C with '71A
Power Pack.
Schematic

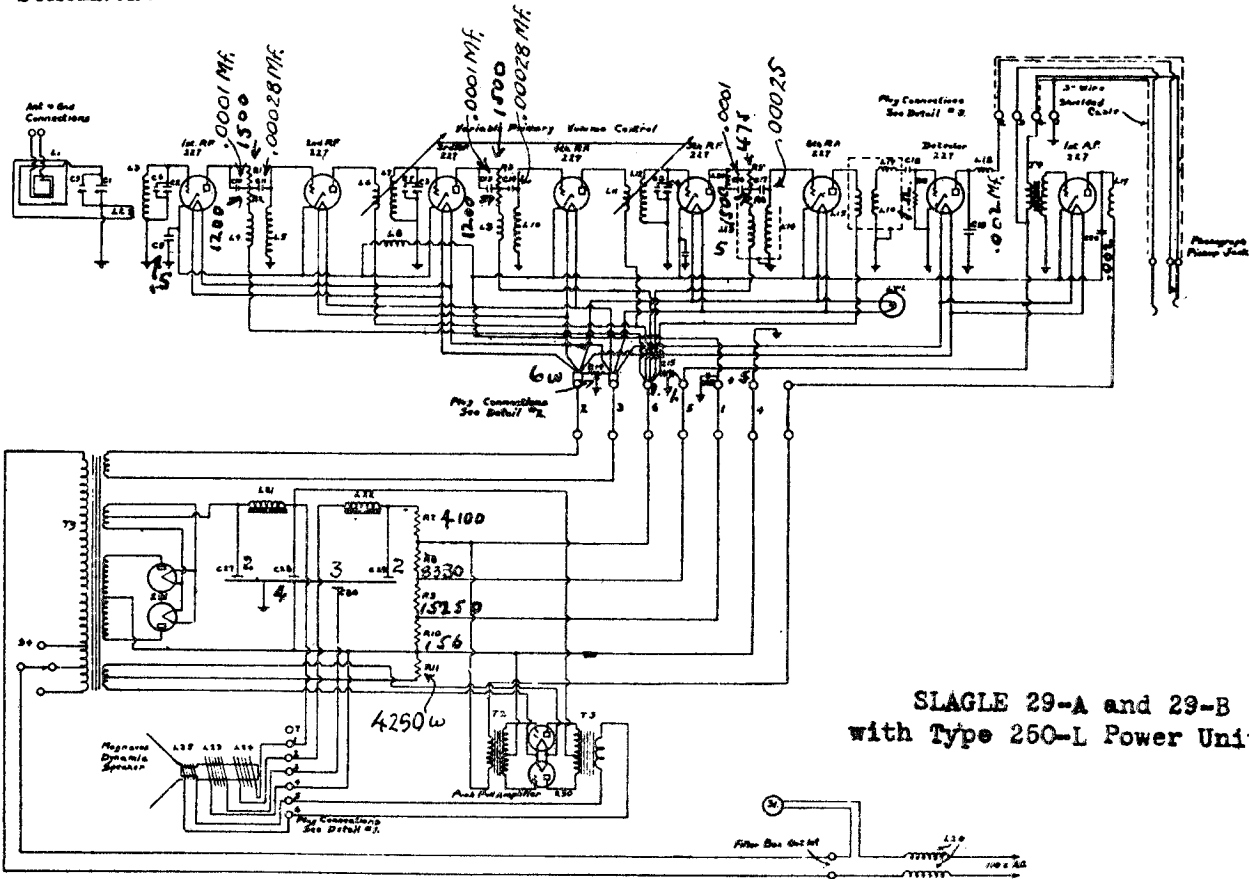


SLAGLE 29-C
with Type 171-L
Power Unit.



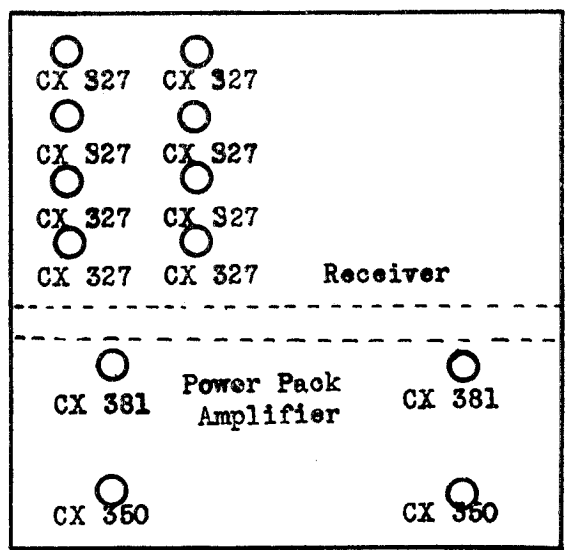
MODEL "Slagle"
29-A and 29-B
with '50 Power
Pack.
Schematic

CONTINENTAL RADIO CORPORATION



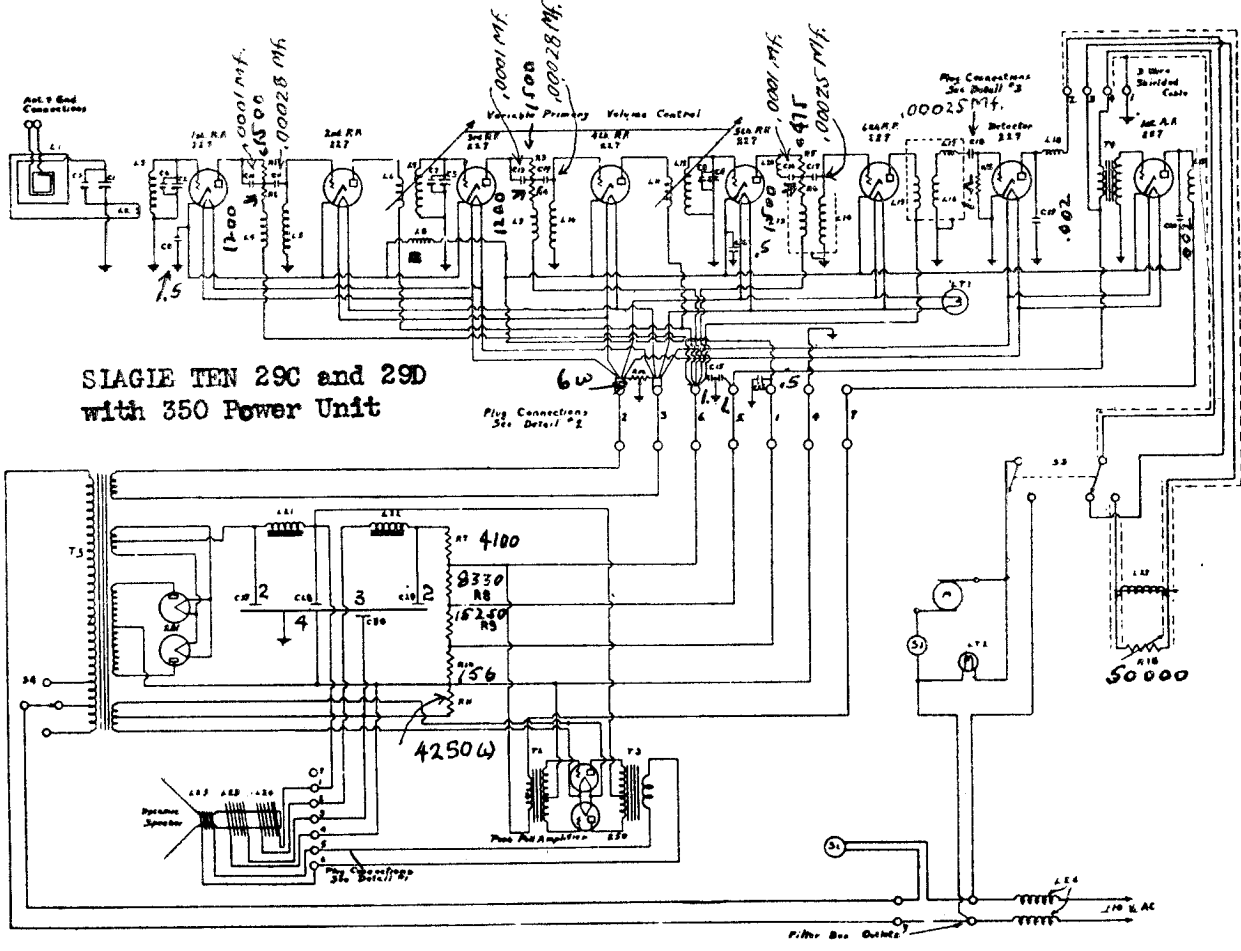
SLAGLE 29-A and 29-B
with Type 250-L Power Unit.

SLAGLE 29A and 29B

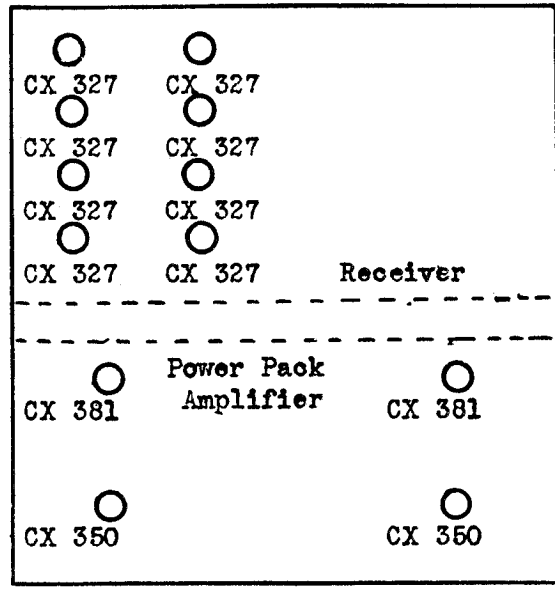


CONTINENTAL RADIO CORPORATION

MODEL "Slagle"
29-C and 29-D
with \$50 Power
Pack.
Schematic

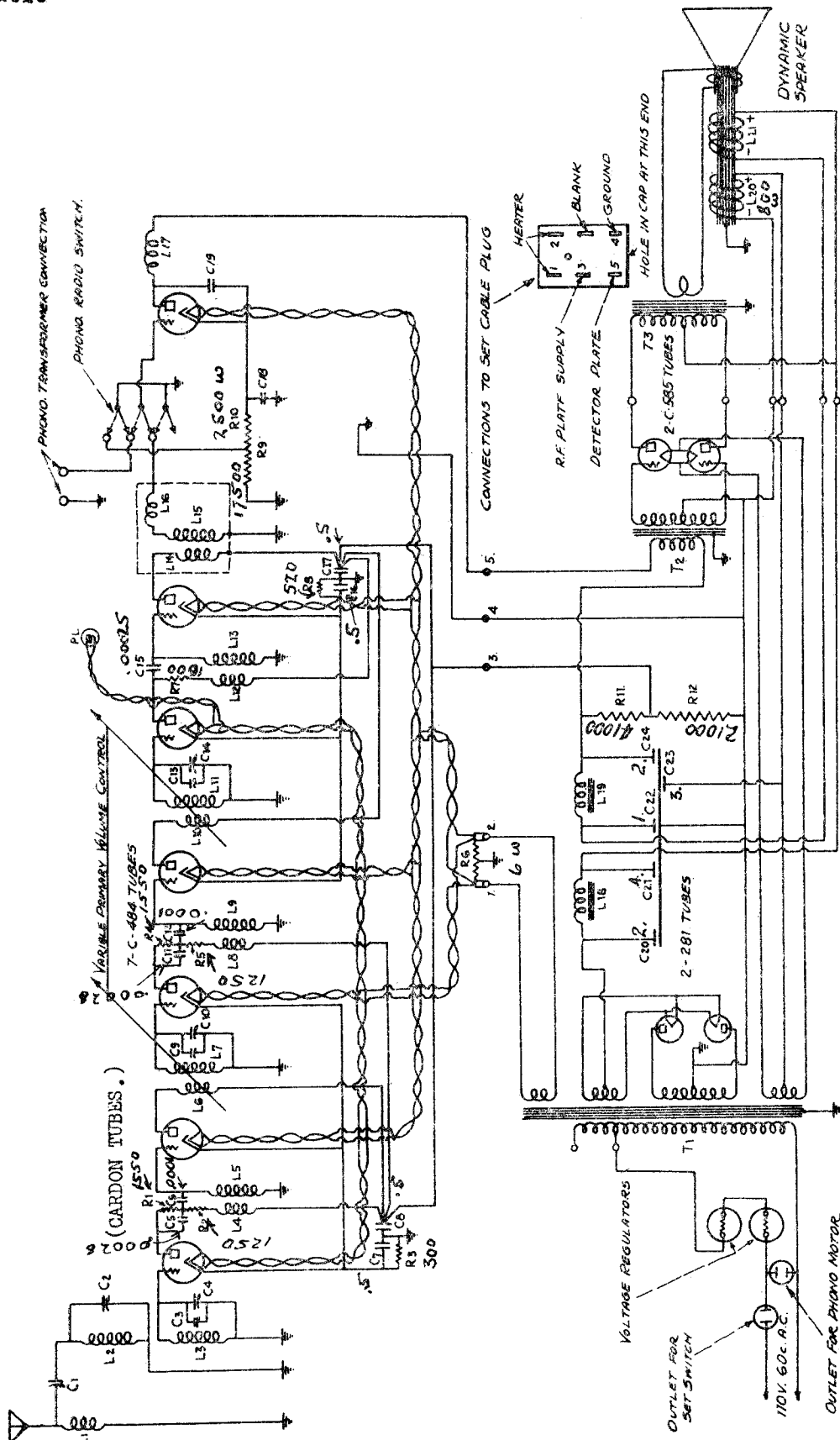


SLAGLE TEN 29C and 29D
with 350 Power Unit



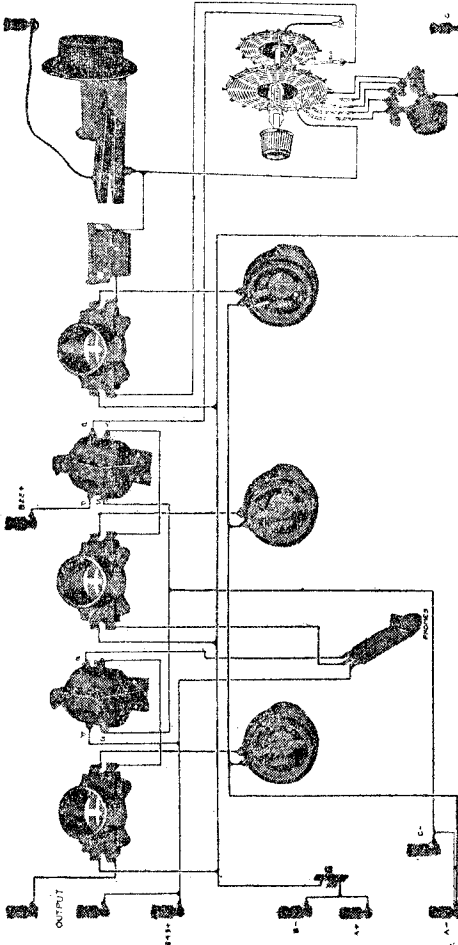
MODEL Star Raider
R-20, R-30, R-40
Schematic

CONTINENTAL RADIO CORPORATION

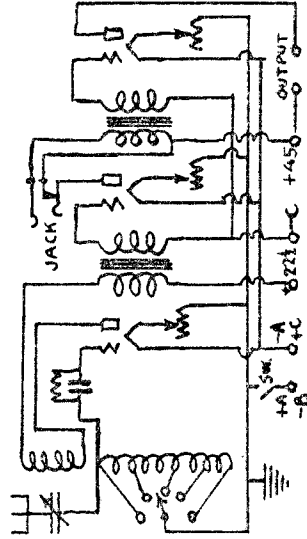


CROSLEY RADIO CORP.

MODEL XJ, XL
MODEL 3B, 3C
Schematic



Crosley 3B or 3C Detector and Two-step Amplifier Receiver

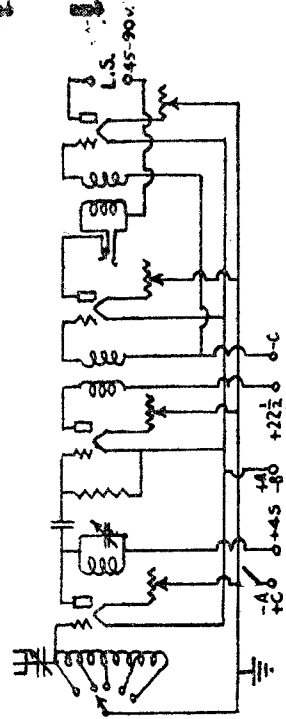


MODEL 3B or 3C

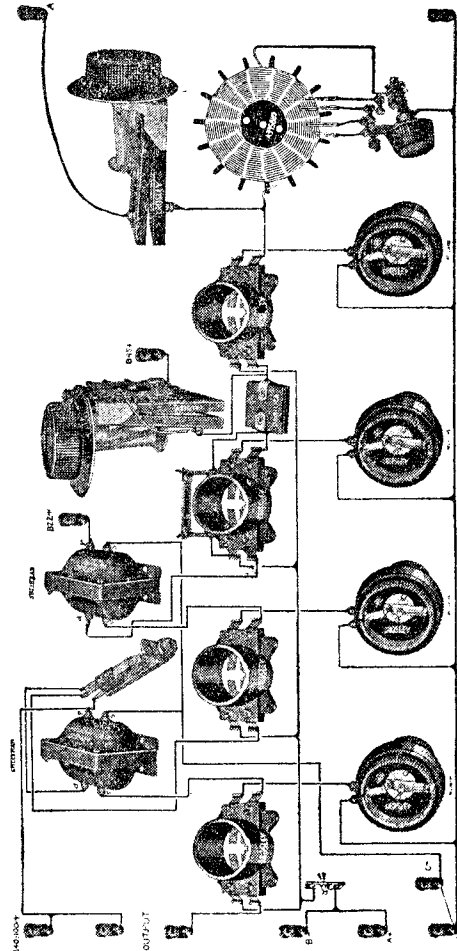
Model XJ

RF	DET	1AF	2AF
01A	01A	01A	01A
X 39	OR	OR	OR
12	X 39	X 39	X 39
OR	12	12	12
OR	OR	OR	OR

FRONT



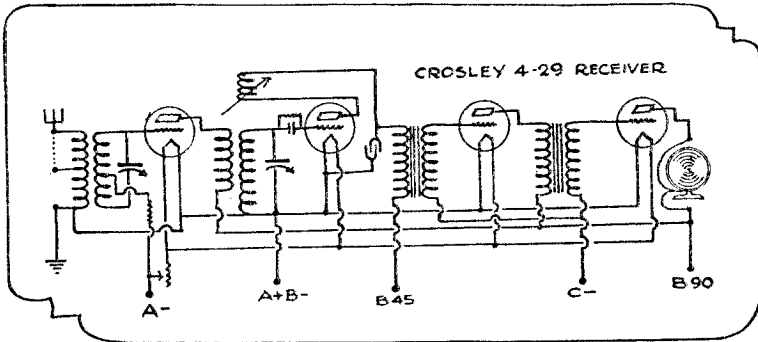
MODELS XJ and XL



Crosley Models XJ and XL Circuit

MODEL 4-29
 MODEL RFL 60,75
 Schematic

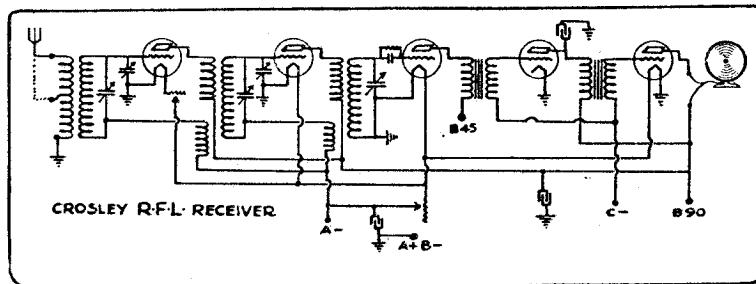
CROSLEY RADIO CORP.



Model 4-29

RF	2 AF	1 AF	DET
6X4	6A6	6A6	6A6
OR	OR	OR	OR
X '99	X '99	X '99	X '99
OR	OR	OR	OR
12	12	12	12

FRONT



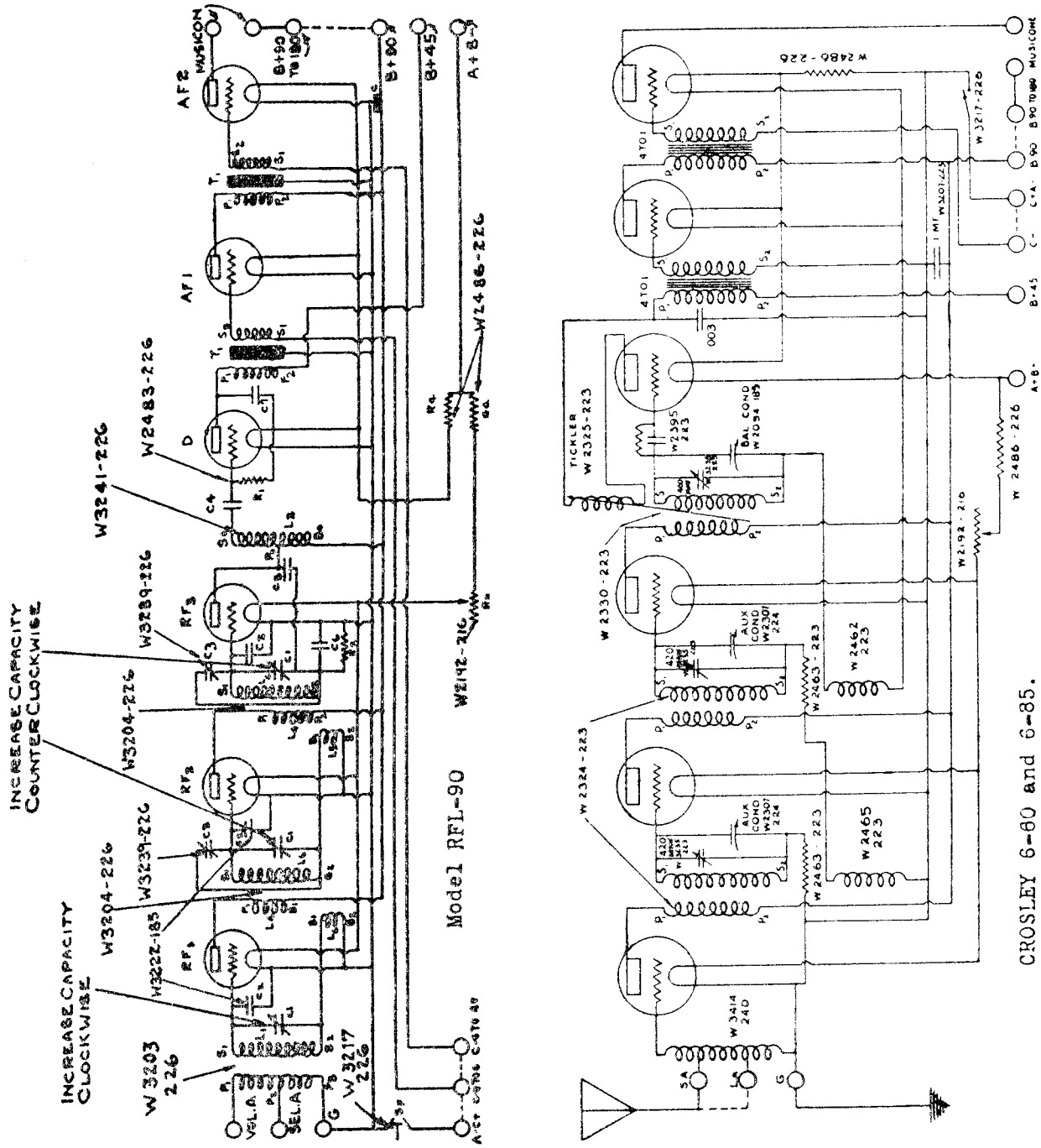
Models RFL60, 75

2 AF	1 AF	DET
6A6	6A6	6A6
OR	OR	OR
1 RF	2 RF	
6X4	6X4	
OR	OR	

FRONT

CROSLY RADIO CORP.

MODEL RFL 90
MODEL 6-60, 6-85
Schematic



RFL 90

(Batt.) 6-60, 6-85

(Batt.)

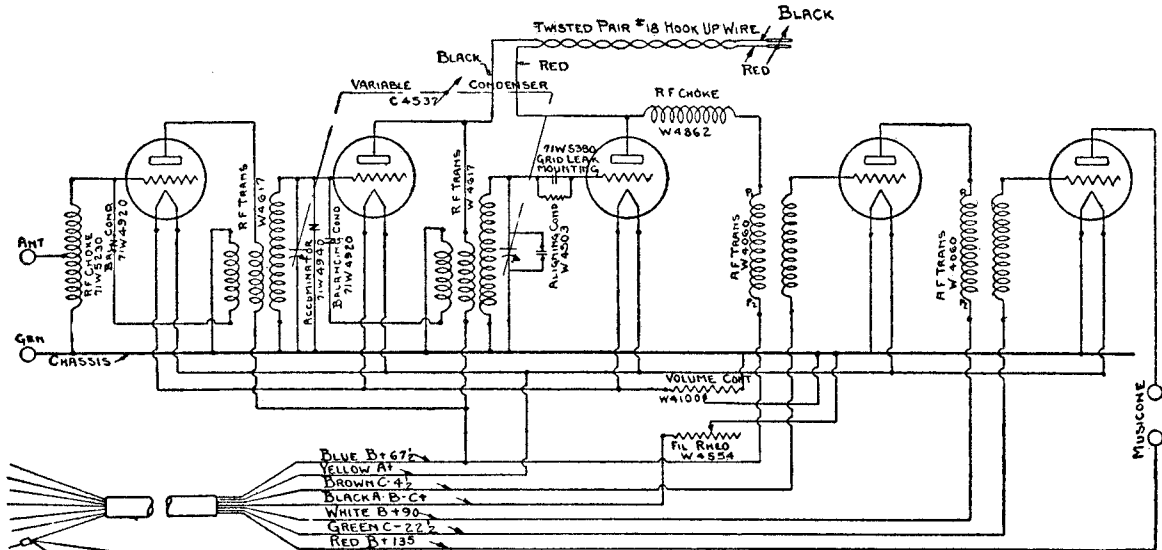
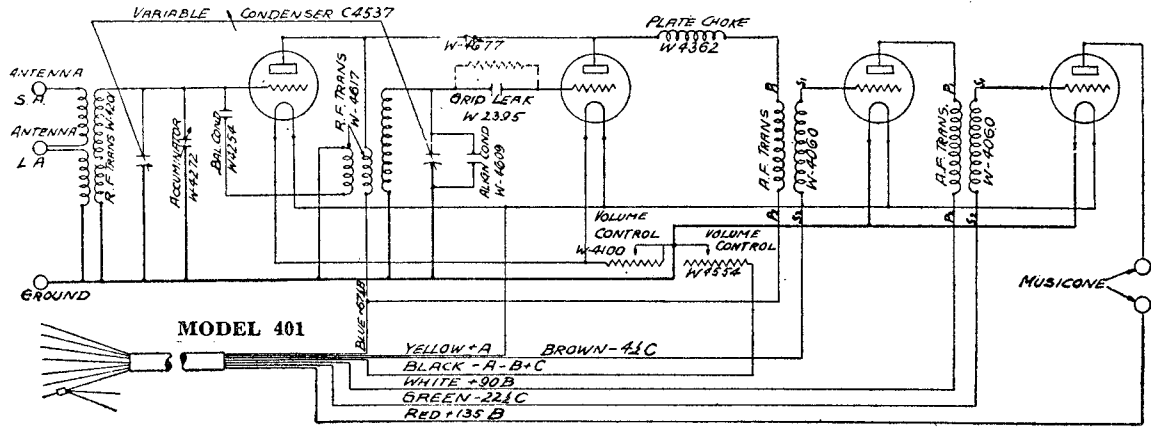
CX-301A or CX-112A	CX-301A	CX-306A	CX-301A	CX-301A or CX-300A or CX-112A
○	○	○	○	○
2nd A.F.	1st A.F.	2nd R.F.	3rd R.F.	Det.
CX-301A				
○				
1st R.F.				

CX-301A	*CX-112A or *CX-371A	CX-301A	CX-301A	CX-301A or CX-300A or CX-112A
○	○	○	○	○
1st R.F.	2nd A.F.	3rd R.F.	1st A.F.	Det.
	CX-301A			
	○			
	2nd R.F.			

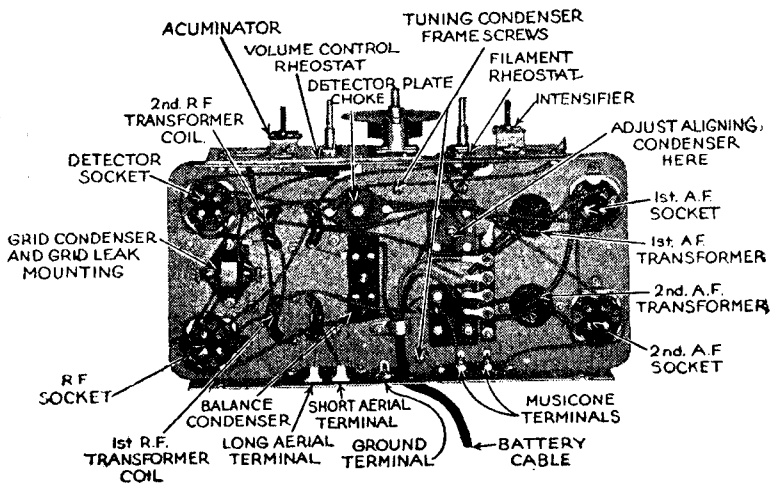
CROSLY 6-60 and 6-85.

MODEL 401
MODEL 401-A
Schematic

CROSLLEY RADIO CORP

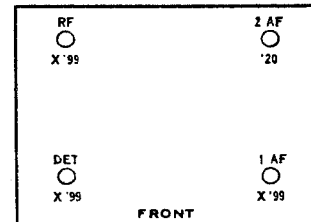


CIRCUIT, MODEL 401-A

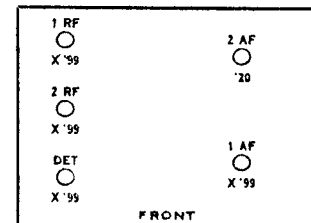


BOTTOM VIEW, MODEL 401 CHASSIS

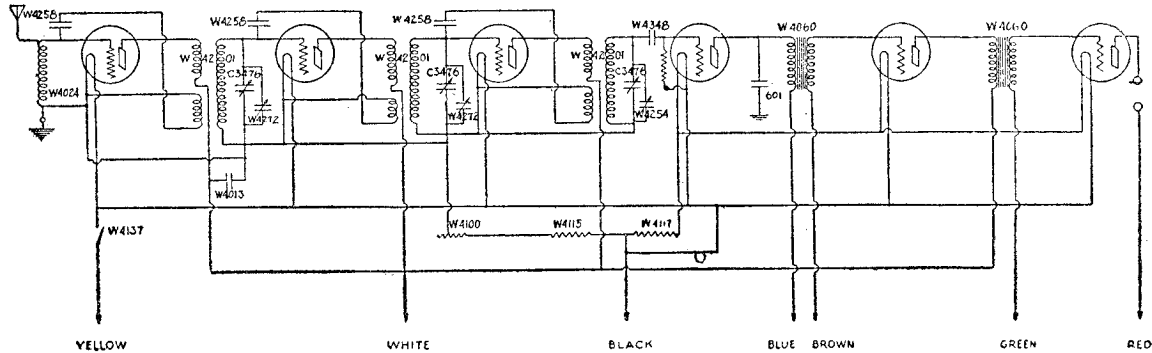
Model 401 Bandbox Jr.



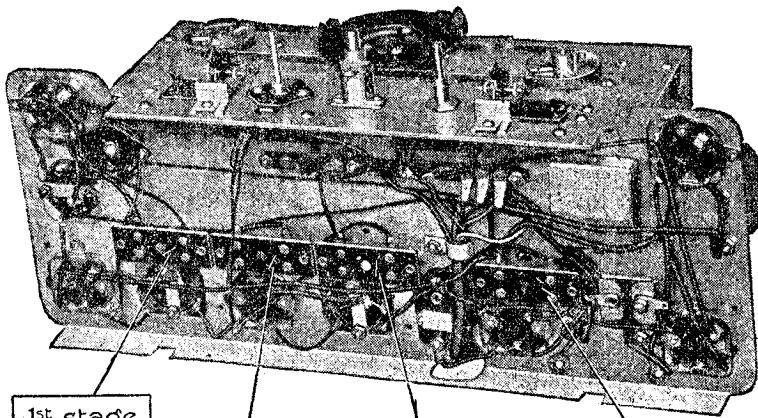
Model 401A Bandbox Jr.



CROSLLEY RADIO CORP. MODEL 601
A-C. Power Unit for A.C.7
Schematic



CIRCUIT OF MODEL 601



1st stage
Balance
Condenser

2nd stage
Balance
Condenser

3rd stage
Balance
Condenser

Aligning
Condenser

BOTTOM VIEW, MODEL 601 CHASSIS

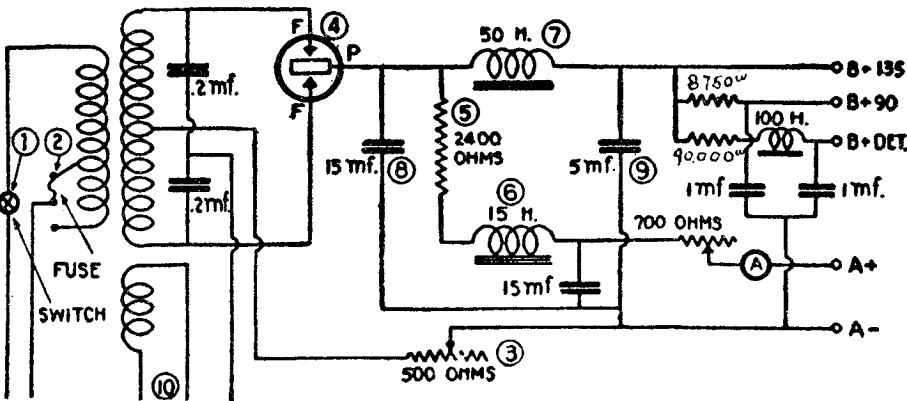
Loudspeaker.

1. Any model Crosley Musicone may be used with Bandbox, Model 601.
2. If a 171 output tube is used with 180 volts on the plate, Crosley Dynacone, Type E, is recommended for greatest volume and highest quality of reproduction. Type E, Dynacone must be used—Type F cannot be operated with this set.

Removing Indicator Dial And Replacing Belts.

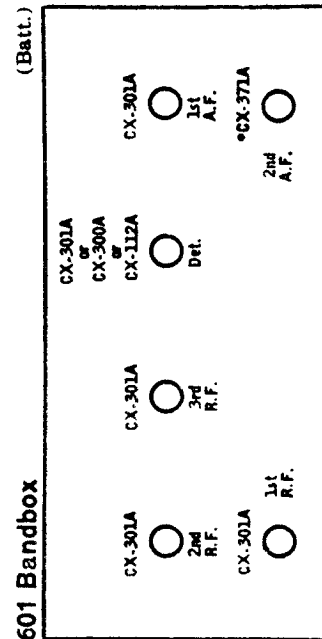
1. Take out three screws attaching indicator dial to center pulley and remove dial.
2. Loosen screws which control tension of belts and take off belts. If center tuning condenser is to be replaced, remove also center pulley.
3. Replace in reverse order, being sure to put belts on pulleys with pulley drive pins through belt holes.

**A.C. Power Unit
for Model A.C.7 Receiver.**



CROSLLEY—Model 601

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET ETC.	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	PLATE MA TEST	PLATE MA CHANGE	PLATE MA CHANGE
1	201A	1st. R.F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
2	201A	2nd. R.F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
3	201	3rd. R.F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
4	201A	Detector	5.1	45	5	45	0.0	2.0	5.5	3.5	
5	201A	1st. A.F.	5.1	90	5	90	4.5	5.0	7.0	2.0	
6	171A	2nd. A.F.	5.1	135	5	135	22.5	20.0	25.0	6.0	

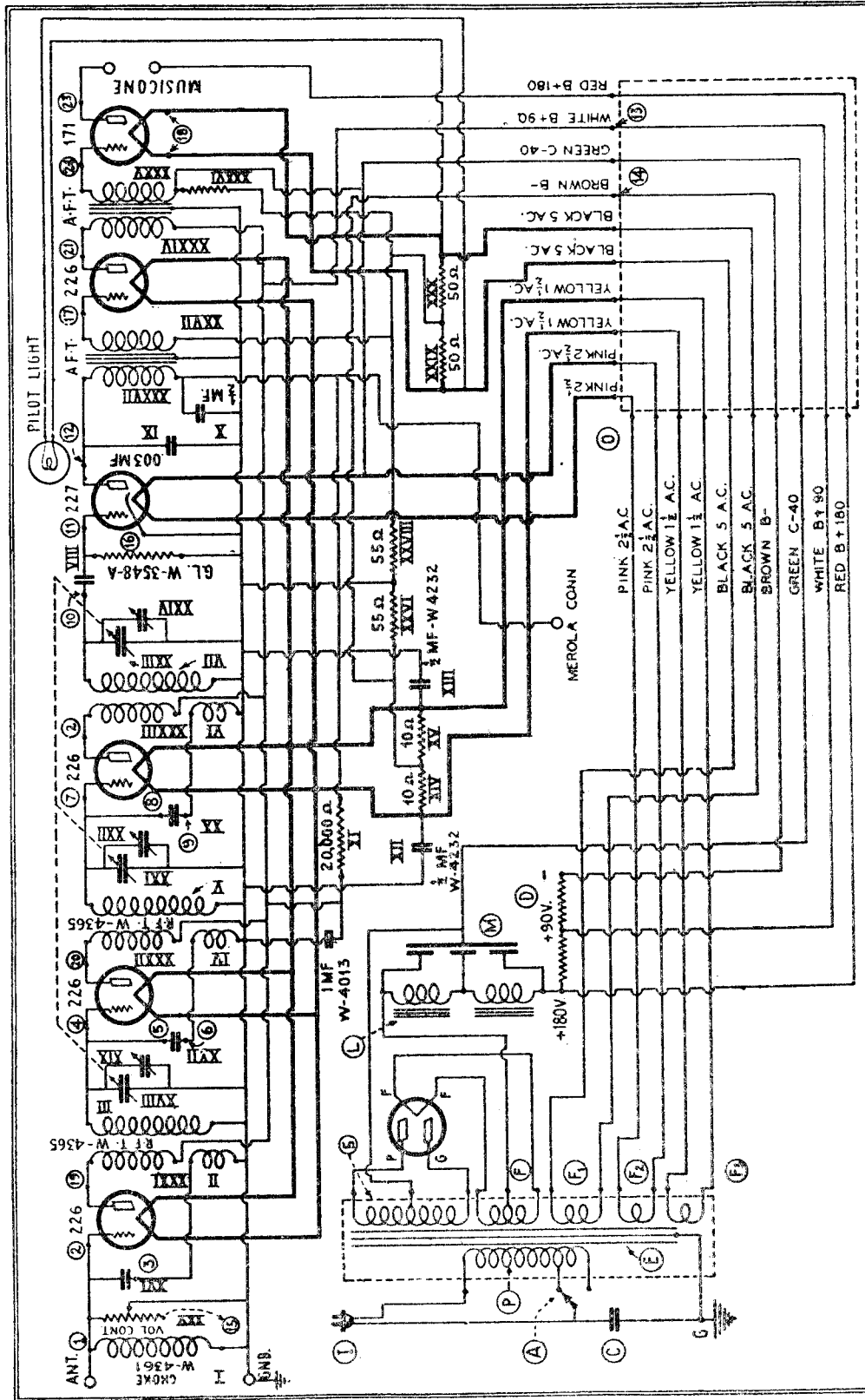


601 Bandbox

MODEL 602 A.C.
Power Converter for
MODELS 104,105,106
Schematic

CROSLLEY RADIO CORP

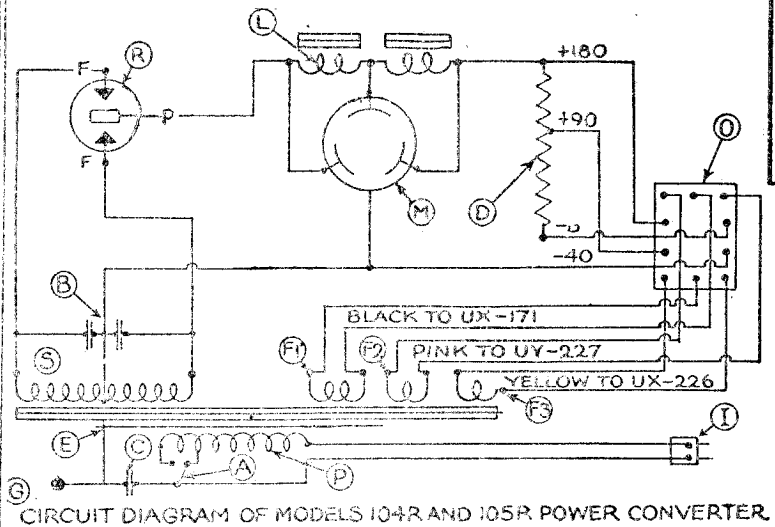
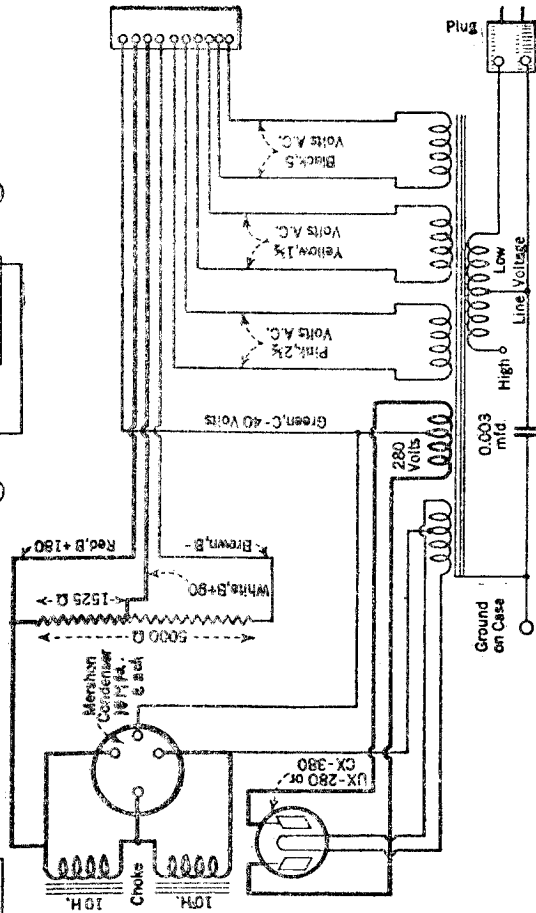
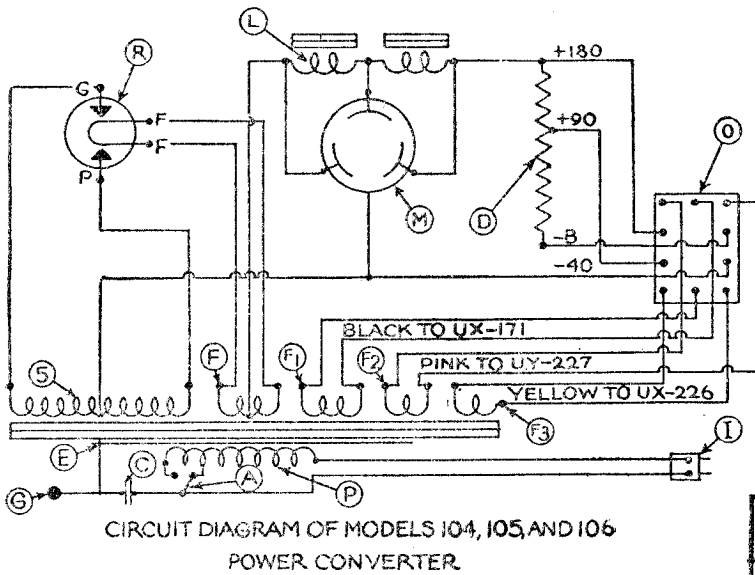
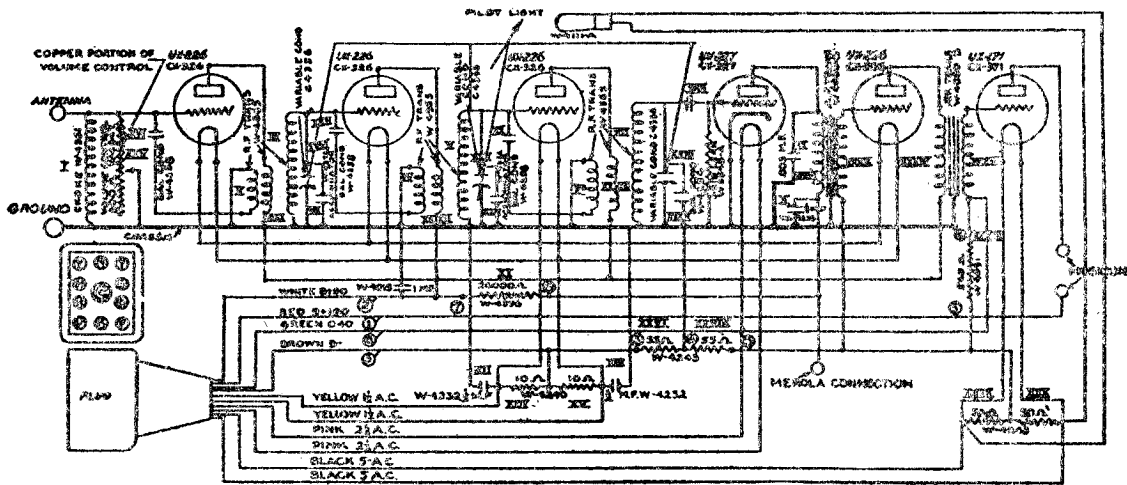
Circuits of the Crosley Model 602 A. C. Bandbox and Power Converter Models 104, 105 and 106. The dotted square at the lower right represents the plug by which the ten connections are made.



Values and Numbers Not Specified in Diagram.
Grid Leak—2 megohms.
VI-VII—R.F. Transformer, W4365.
X—By-Pass Condenser, W4233.
XI—Detector Plate Resistor, W4376.
XIV-XV—Center-Tap Resistor, W4240.
XVI-XVII-XX—Balancing Condensers, W4258.
XIX-XXII—Accumulators, (Compensating Condensers), W4272.
XXIII-XXI-XXIII—Tuning Condensers.
XXIV—Balancing Condenser, W4254.
XXV—Volume Control, 500 ohms, W4247.
XXVII-XXXIV—A.F. Transformers, W4060B (A .0008-mf. by-pass condenser W4512 is shunted across the secondary XXXV).
XXXVI—"C" Biasing Resistor, 540 ohms, W4391.

CROSLLEY RADIO CORP

MODEL 602
 MODEL 602 Power Unit
 MODELS 104, 105, 108
 MODELS 104R, 105R

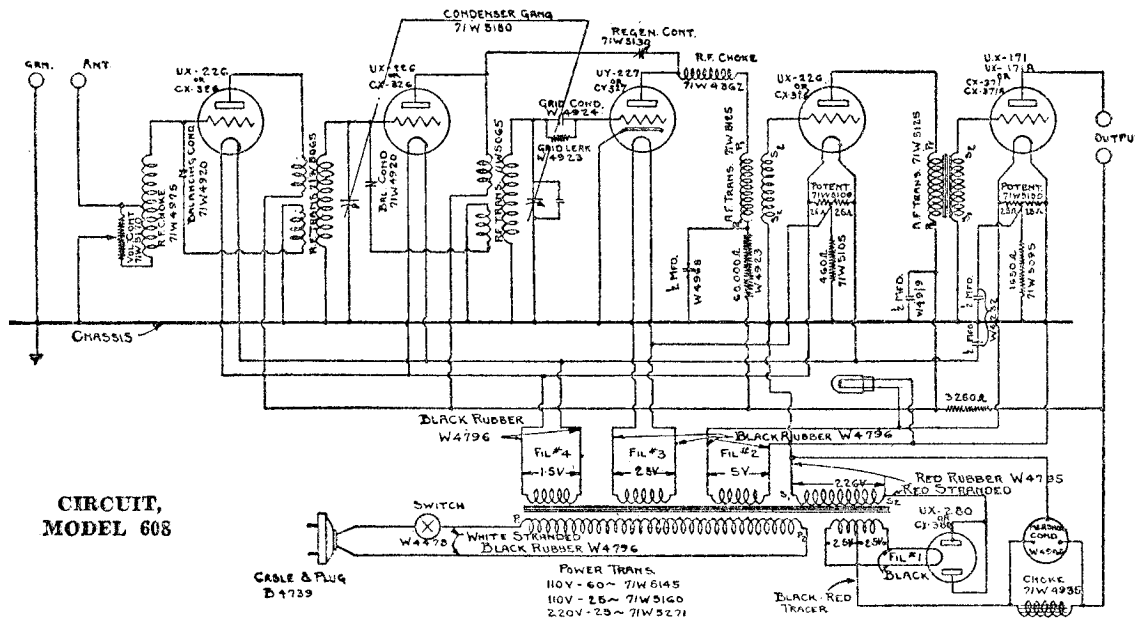


Model 602 (AC) Bandbox

1 RF	3 RF	DET	1 AF
'25	'26	'27	'28
PILOT 5.0 V.			
1 RF			2 AF
'25			'71A
FRONT			

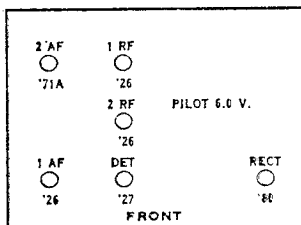
MODEL 608
Schematic
Voltage, Bottom View

CROSLLEY RADIO CORP.



CROSLLEY—Model 608
Line Voltage 115—227 Emitter Biased 7 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

Model 608 Gembox



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F., DET., ETC.	READINGS PLUG IN SOCKET OF BAY								
			TUBE OUT				TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE
1	226	1st. R.F.	1.55	120	1.45	115	7		5.5	9.0	3.5
2	226	2nd. R.F.	1.55	120	1.45	115	7		5.3	9.0	3.5
3	227	Detector	2.40	100	2.20	30	0		1.5	1.8	.3
4	226	1st. A.F.	1.55	120	1.45	110	7		5.0	8.5	3.2
5	171A	2nd. A.F.	5.2	210	5.00	135	25		15.0	17.0	2.0
6	280	Rectifier	5.3		5.00						

Tuning Condensers.

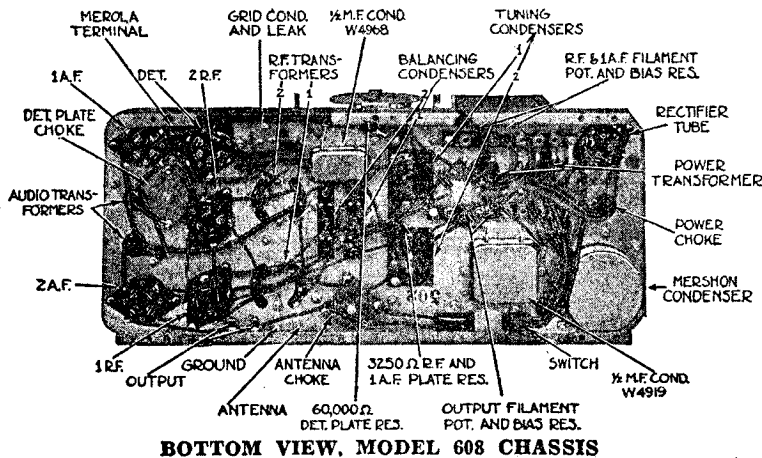
1. The complete condenser gang should be removed and replaced as a unit.
2. Take off station selector knob and remove leads from pilot light socket first. Then unsolder condenser leads and remove gang. Replace in reverse order.

Regeneration.

1. Regeneration is secured by means of a small variable condenser connecting the detector plate to the plate of the second r. f. tube. The amount of regeneration may be controlled by adjusting this condenser.

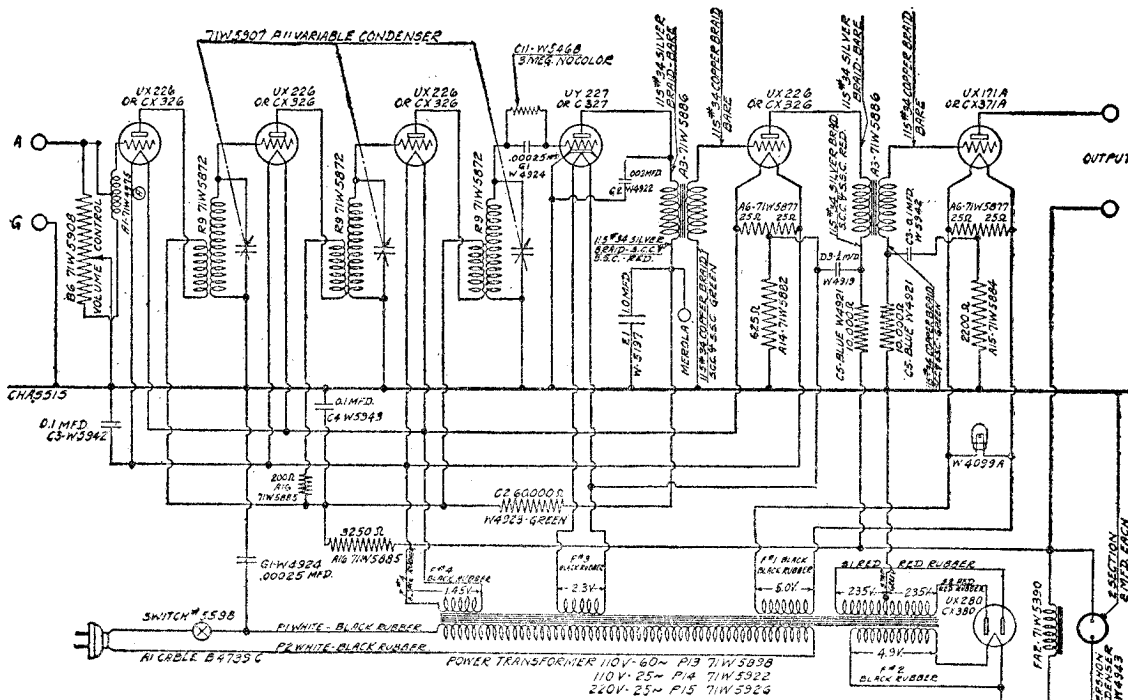
Alignment of Tuning Condensers

1. A small adjustable aligning condenser shunted across the detector-stage tuning condenser serves as a means of aligning the tuning condensers so that they track together properly.



CROSLY RADIO CORP.

MODEL 610
Schematic
Voltage, Bottom View

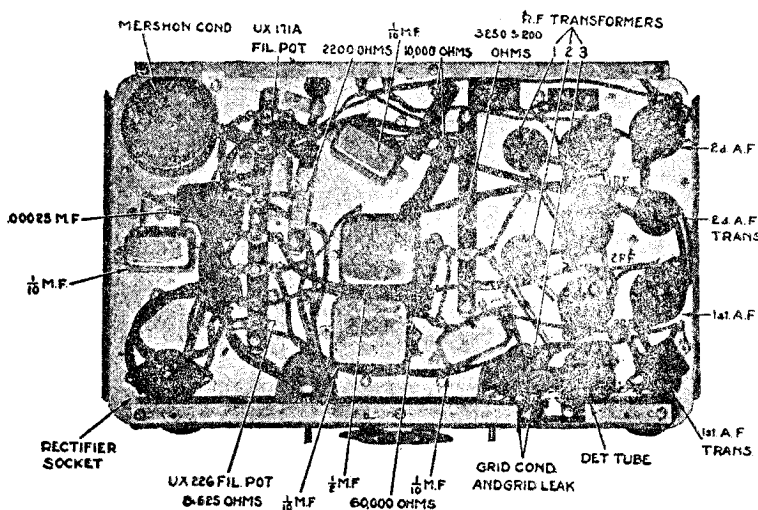
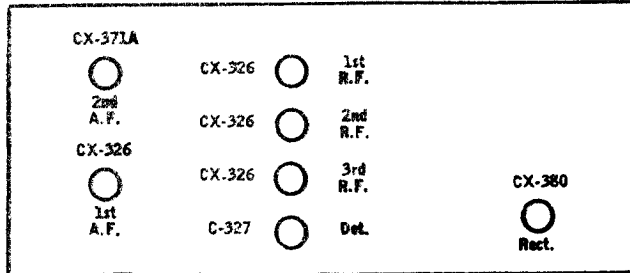


CROSLY—Models 610-
Line Voltage 115—Volume Control Position Max

TUBE NO IN CHASSIS	TYPE OF TUBE	POSITION OF TUBE 1st R.F. DET. ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT			TUBE IN TESTER						
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	CATHODE HEATER VOLTS	NORMAL PLATE VOLTS	PLATE CHARGE M.A.	PLATE CHANGE M.A.	SCREEN GRID VOLTS	
1	226	1st R.F.	1.56	1.68	1.45	1.60	15.0	—	5.0	6.0	3.0	—
2	226	2nd R.F.	1.55	1.65	1.45	1.80	15.0	—	5.0	6.0	3.0	—
3	226	3rd R.F.	1.55	1.65	1.45	1.60	15.0	—	5.0	6.0	3.0	—
4	227	Det.	2.50	1.50	2.30	30	—	15.0	2.5	2.9	0.4	—
5	226	2nd A.F.	1.58	1.60	1.45	1.75	15.0	—	5.0	6.0	3.0	—
6	171A	3rd A.F.	0.5	1.88	0.00	1.70	40.0	—	20.0	25.0	3.0	—
7	220	Rect.	5.6	—	5.00	—	—	—	30	—	—	—

610 Gembox.

(A.C.)



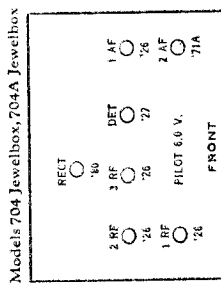
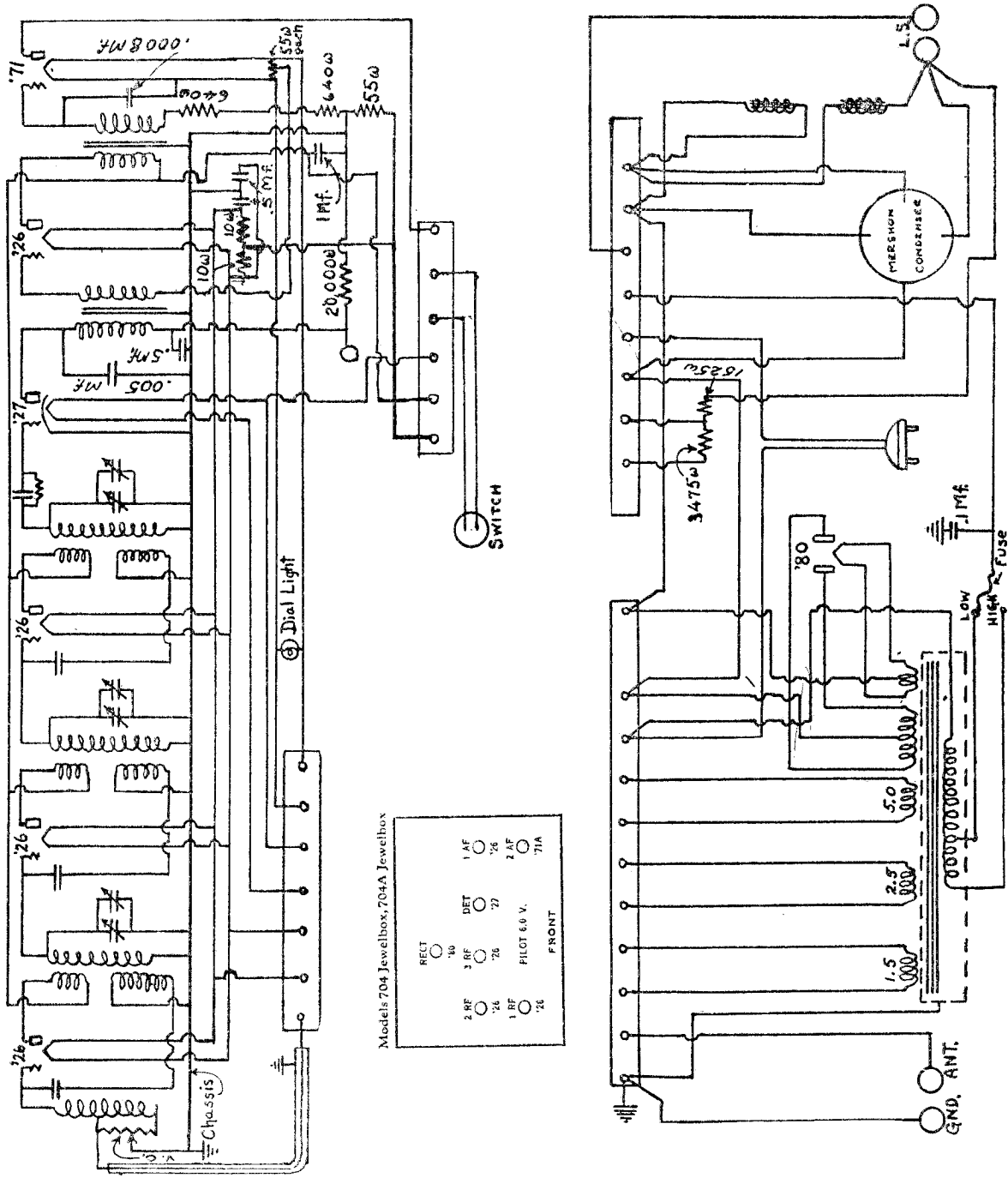
Balancing.

With the set in operation, slightly adjust the angles of the radio-frequency coils until the set does not oscillate at any point in its wave length range or until the sensitivity is improved. The first coil toward the front of the set is the most critical to this adjusting operation, the second coil next,, while the third coil seldom needs to be touched.

In making these adjustments, always replace the lid before checking the operation.

MODEL 704
 MODEL 704 Power Unit
 Schematic
 MODEL 704-A Voltage

CROSLLEY RADIO CORP.



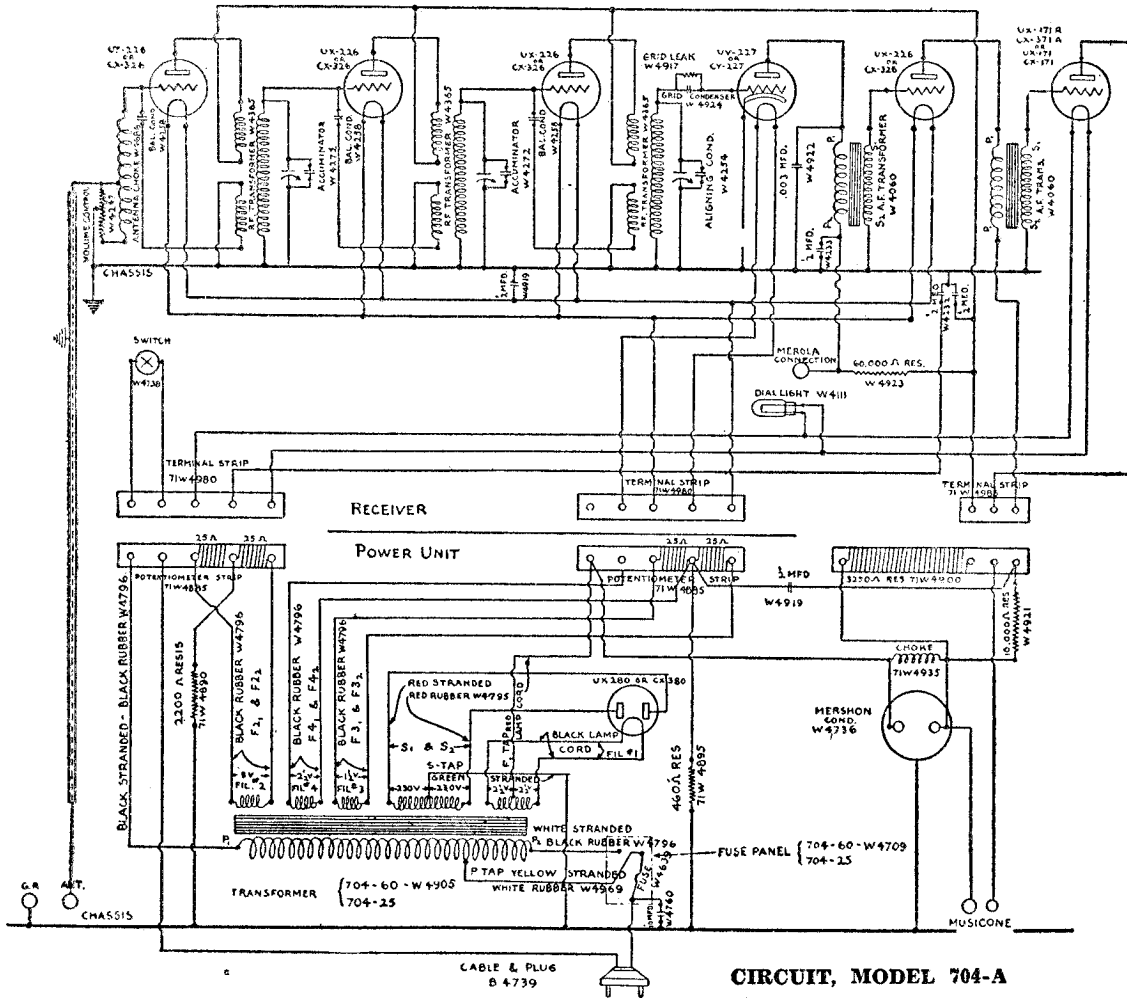
Tube	Fil. Vol.	Plate Vol.	Grid Bias.	Plate Cur.
RF1	1.5	98	3.	7. ma
RF2	1.3	98	3.	7.
RF3	1.3	98	3.	7.
Det	1.7	42	-	2.5
AF1	1.3	95	5.	3.2
AF2	4.8	159	35.	17.
Rec.	4.5			

Voltage Data For Crosley 704-A

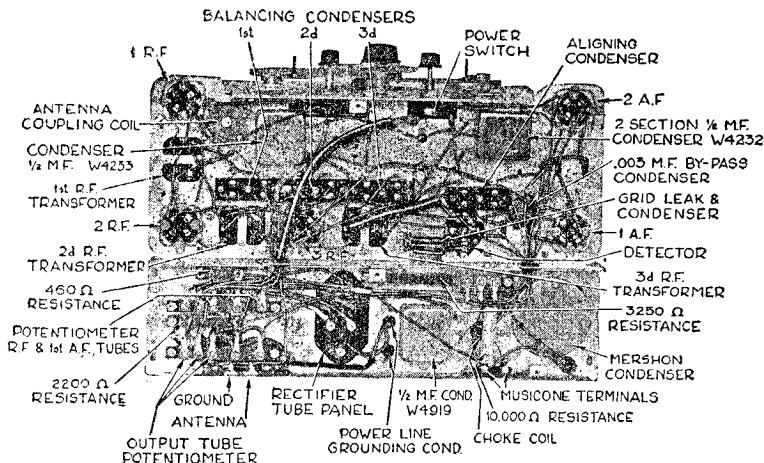
CROSLY RADIO CORP

MODEL 704-A

Schematic, Bottom View



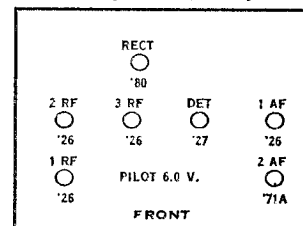
CIRCUIT, MODEL 704-A



BOTTOM VIEW, MODEL 704-A CHASSIS

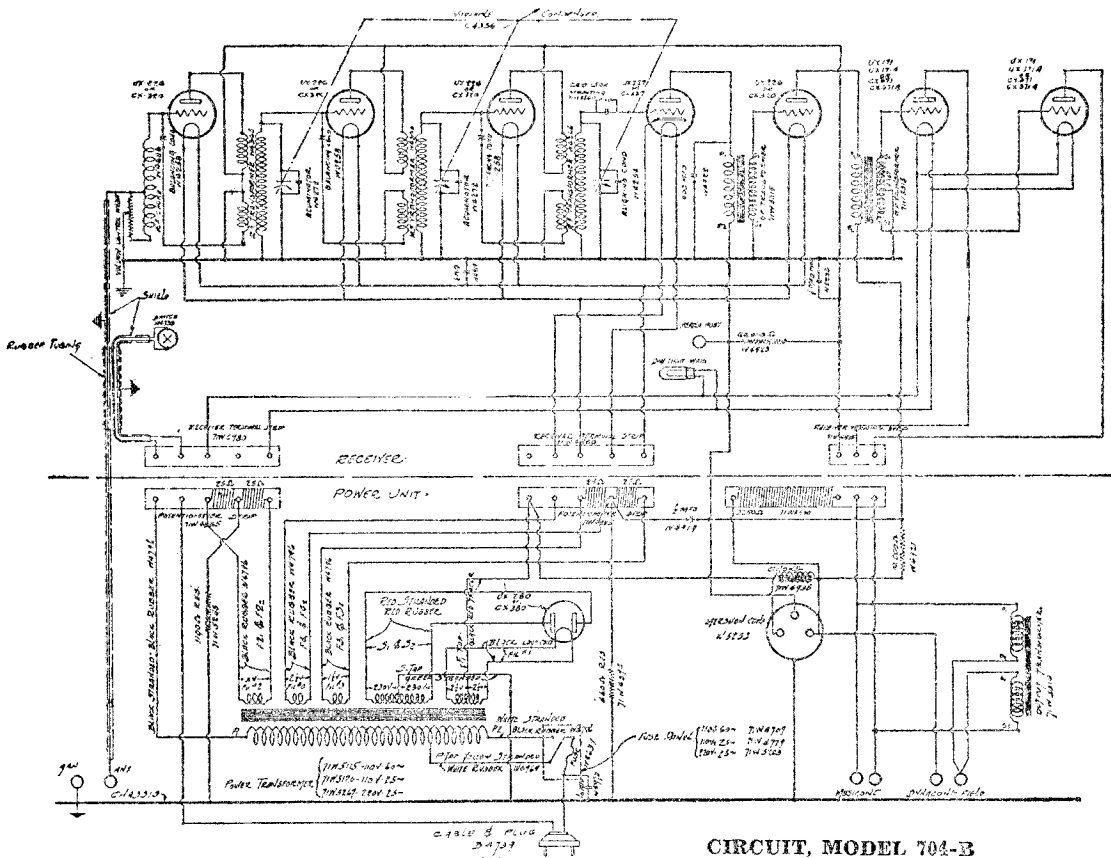
NOTE:—This service sheet applies to all Jewelbox Model 704 sets having seven tubes, including rectifier (single output tube only) numbered from GJD 16,000 to 21,000.

Models 704 Jewelbox, 704A Jewelbox

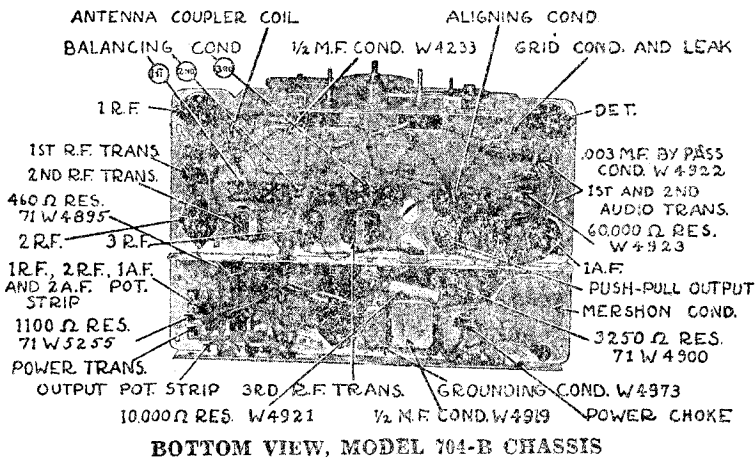


MODEL 704-B
Schematic, Bottom View
Voltage

CROSLLEY RADIO CORP.



CIRCUIT, MODEL 704-B

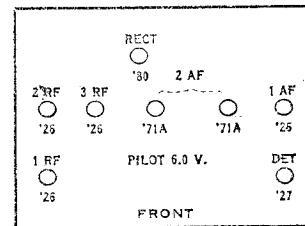


BOTTOM VIEW, MODEL 704-B CHASSIS

Alignment of Tuning Con-
densers.

1. A small auxiliary variable condenser shunted across the detector tuning condenser serves as a means of aligning the tuning condensers so that they "track" together.

Model 704B Jewelbox

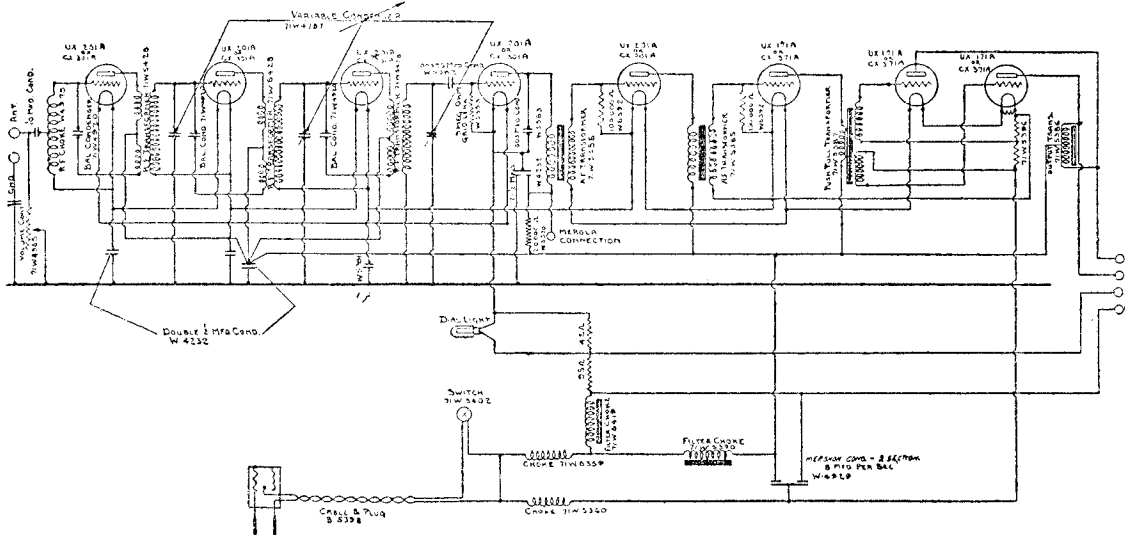


Line Voltage 117.5—227 Emitter Based 11 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

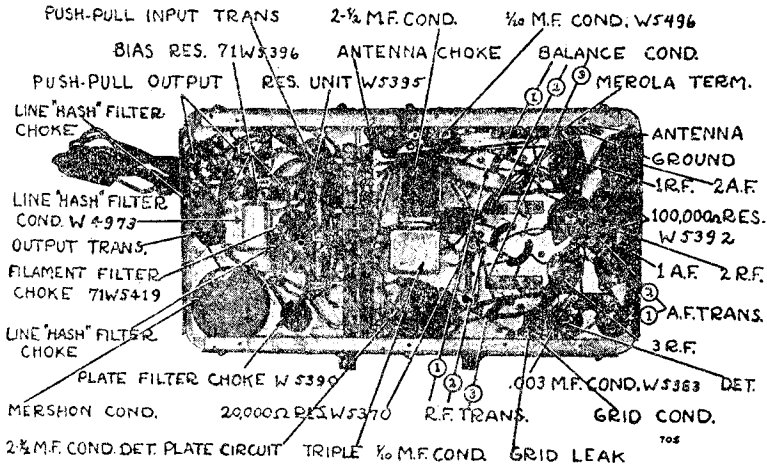
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST, 2ND, DET., ETC.)	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	GRID/PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	226	1st. R.F.	1.6	1.60	1.5	1.50	11.0		6.5	12.0	8.5	
2	226	2nd. R.F.	1.5	1.60	1.5	1.50	11.0		6.5	13.4	6.9	
3	226	3rd. R.F.	1.6	1.60	1.5	1.50	11.0		6.5	13.4	6.9	
4	227	Detector	2.80	1.90	2.25	1.30	0.0		2.2	2.75	2.5	
5	228	1st. A.F.	1.6	2.20	1.5	1.20	9.0		6.2	6.0	1.8	
6	171A	2nd. A.F.	5.3	1.85	5.0	1.70	37.5		20.8	23.0	3.0	
7	171A	2nd. A.F.	5.3	1.85	5.0	1.70	37.5		20.0	23.0	3.0	
8	280	Rectifier			4.9							

CROSLY RADIO CORP.

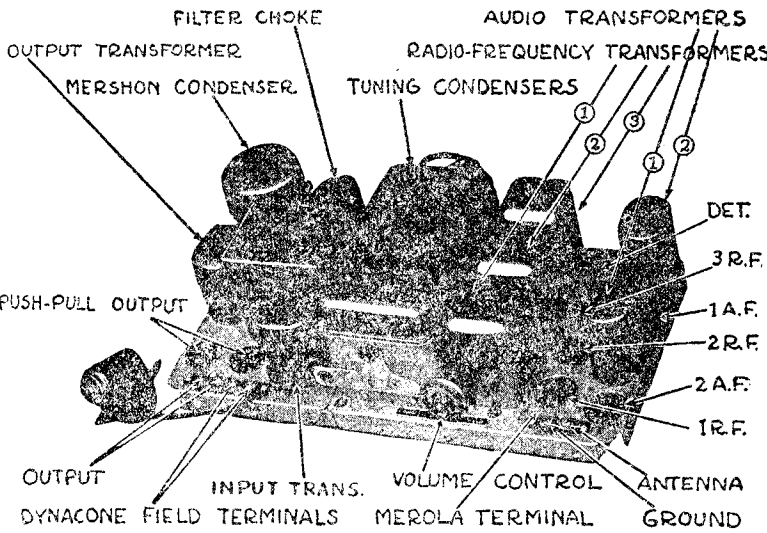
MODEL 705
Schematic,
Bottom and Rear View



CIRCUIT, MODEL 705

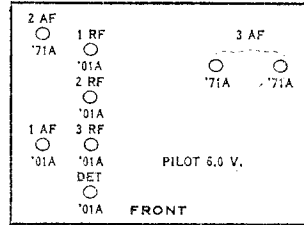


BOTTOM VIEW, MODEL 705 CHASSIS



REAR VIEW, MODEL 705 CHASSIS

Models 705 Showbox (DC), 61, 62



Repairing and Replacing Parts
Replacing Parts.

1. In replacing parts on Model 705 the bottom must be removed.

Tuning Condensers.

1. The complete condenser gang should be removed and replaced as a unit.

2. Take off knobs and remove leads from pilot light socket and volume control first. Next remove tuning condenser leads and remove assembly. Replace in reverse order.

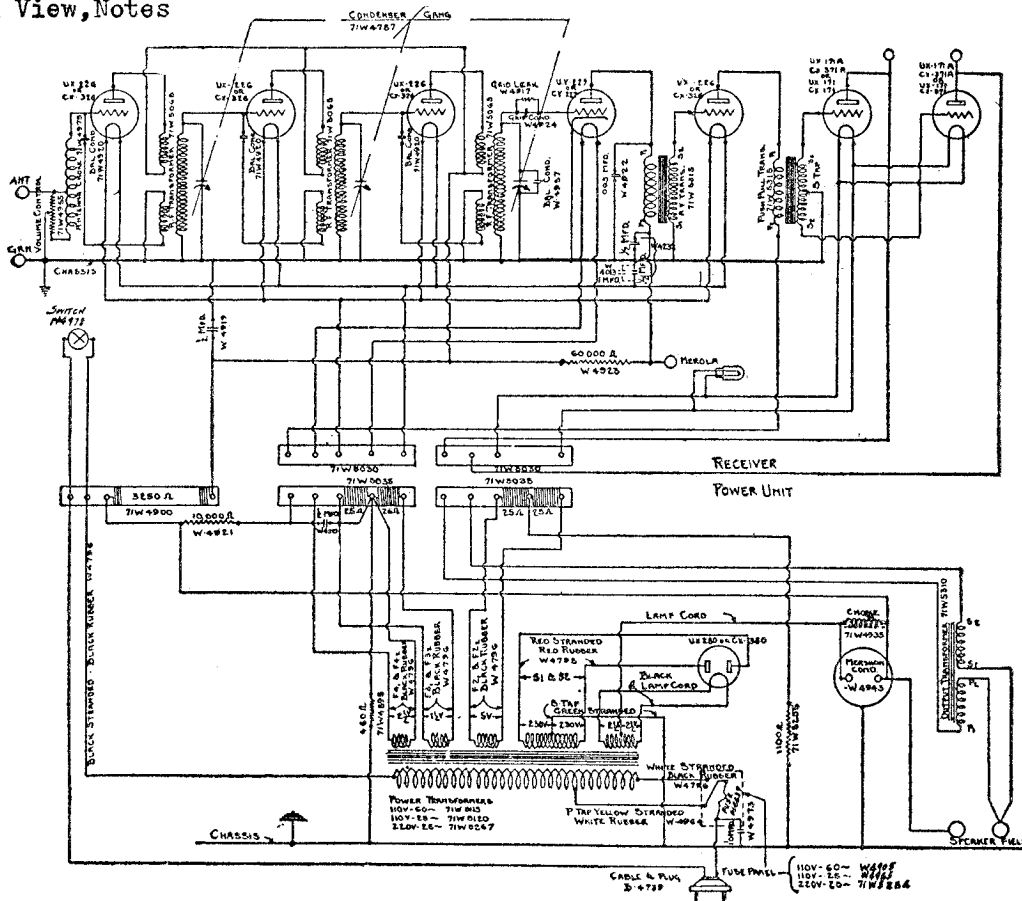
Radio-Frequency Transformers.

1. Unsolder leads first. Then remove shield can. Finally take off transformer coils. Replace in reverse order.

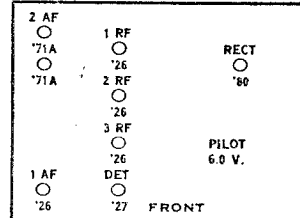
2. Mark all leads and terminals.

MODEL 706
Schematic, Voltage
Bottom View, Notes

CROSLLEY RADIO CORP.



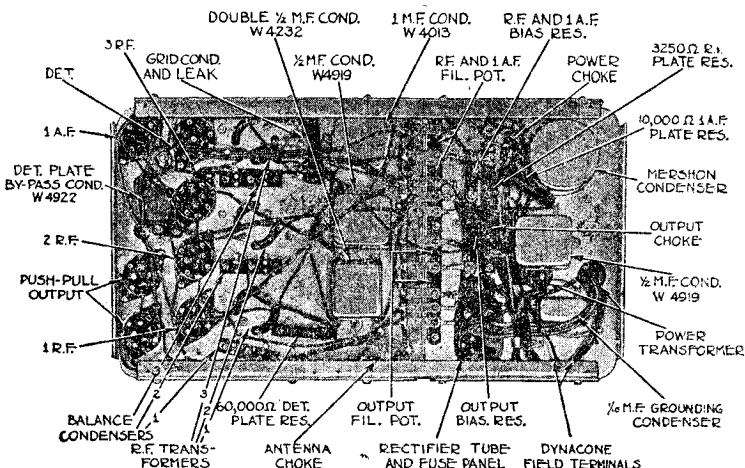
Models 706 Showbox,



CROSLLEY- 706

Line Voltage 117.5—227 Emitter Based 11 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F., DET. ETC.	READINGS PLUG IN SOCKET OF METER							
			TUBE OUT			TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	226	1st. R.F.	1.6	160	1.5	150	11.0	6.5	12.0	5.5
2	226	2nd. R.F.	1.6	160	1.5	150	11.0	6.5	13.4	6.9
3	226	3rd. R.F.	1.6	160	1.5	150	11.0	6.5	13.4	6.9
4	227	Detector	2.50	150	2.25	30	0.0	2.2	2.78	5.5
5	226	1st. A.F.	1.6	220	1.5	120	9.0	6.2	8.0	1.8
6	171A	2nd. A.F.	5.3	185	5.0	170	37.5	20.0	23.0	3.0
7	171A	2nd. A.F.	5.3	185	5.0	170	37.5	20.0	23.0	3.0
8	280	Rectifier	5.3		4.9					



BOTTOM VIEW, MODEL 706 CHASSIS

Audio-Frequency Transformers.

- Both audio transformers are mounted in a single can. They must be removed as a single unit.
- Unsolder leads. Remove nuts holding assembly in position and take off transformers. Replace in reverse order.

Tuning Condensers.

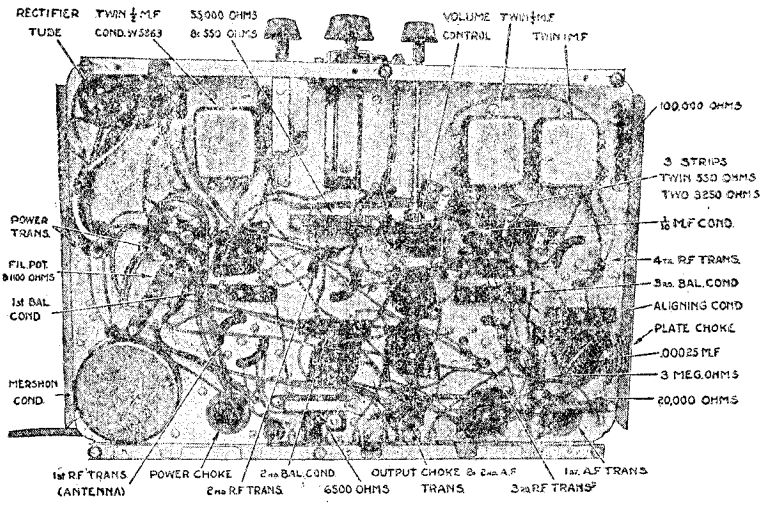
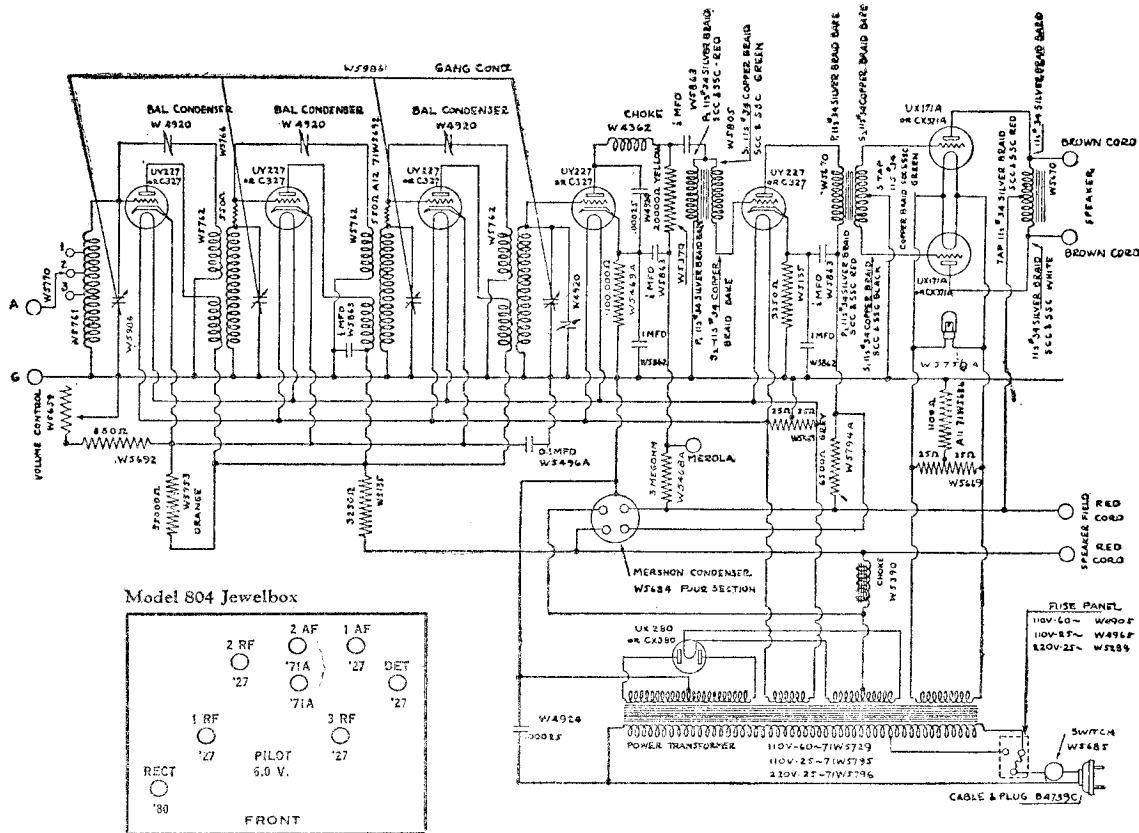
- The complete condenser gang should be removed and replaced as a unit.
- Take off knobs and remove leads from pilot light socket and volume control first. Next remove switch from holder. Then unsolder condenser leads and remove assembly. Replace in reverse order.

Radio-Frequency Transformers.

- Unsolder leads first. Then remove shield can. Finally take off transformer coils. Replace in reverse order.

CROSLY RADIO CORP.

MODEL 804 Schematic, Voltage Bottom View, Notes



Alignment and Balancing.

1. A small, adjustable, aligning condenser is shunted across the detector stage tuning condenser for aligning the tuning condensers controlled by the station selector.
2. Small, adjustable neotrodyne condensers are provided for balancing. Follow the instructions for balancing given on page 4, "Crosley Service Manual." Insulate one of the heater prongs, **not the emitter.** **Do not use headphones.**

Connections.

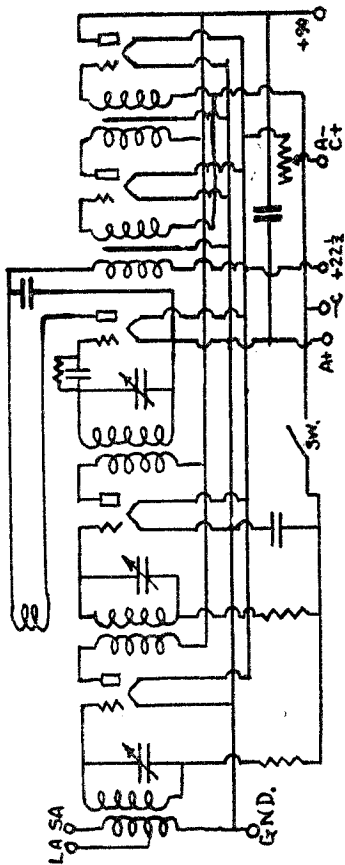
1. Follow the connection diagram shown herewith. A small lead near the antenna terminal is provided in order to adjust the set for best operation with different types of aerials. For average operation with an average antenna, this lead should be inserted in terminal "2" at the rear of the chassis. For greatest sensitivity, insert the lead in terminal "1", and for greatest selectivity in terminal "3".

CROSLY—Model 804
Line Voltage 117.5—Set on High Volt Tap—Volume Control Position Max

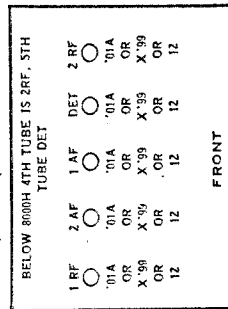
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE	READINGS, PLUG IN SOCKET OF SET										
			TUBE OUT					TUBE IN TESTER					
	1st. R.F. DET. ETC.		VOLTS	Ω	VOLTS	VOLTS	VOLTS	Ω	CATHODE HEATER VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. GRID CHANGE M.A.	SCREEN GRID VOLTS
1	227	1st RF	2.45	185	2.20	175	12	12	5.2	8.0	3.8	-	-
2	227	2nd RF	2.45	155	2.20	175	12	12	5.2	8.0	3.8	-	-
3	227	3rd RF	2.45	185	2.20	175	12	12	5.2	8.0	3.8	-	-
4	227	Det.	2.45	150	2.20	150	22	12	0.2	0.25	0.6	-	-
5	227	1st AF	2.45	225	2.20	184	13	12	5.2	8.0	3.8	-	-
6	171A	2nd AF	5.2	200	5.10	180	40	-	18	25	7.0	-	-
7	171A	2nd AF	5.2	200	5.10	180	40	-	18	25	7.0	-	-
8	280	Rect.	5.0	-	4.80	-	-	-	80	-	-	-	-

MODEL TRIRDYN
 MODEL 51
 MODEL 5-38
 Schematic

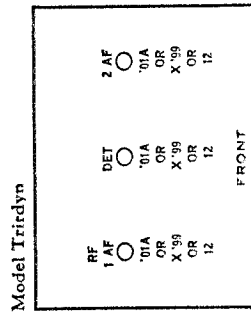
CROSLEY RADIO CORP.



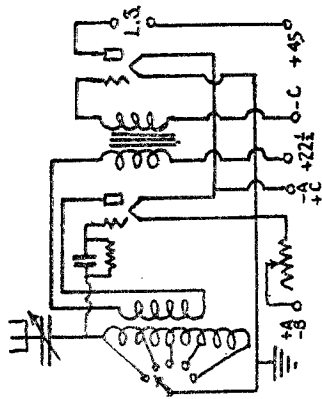
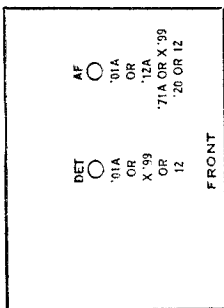
Model 5-38, Series 2 (Serial No. 8000H & Above)



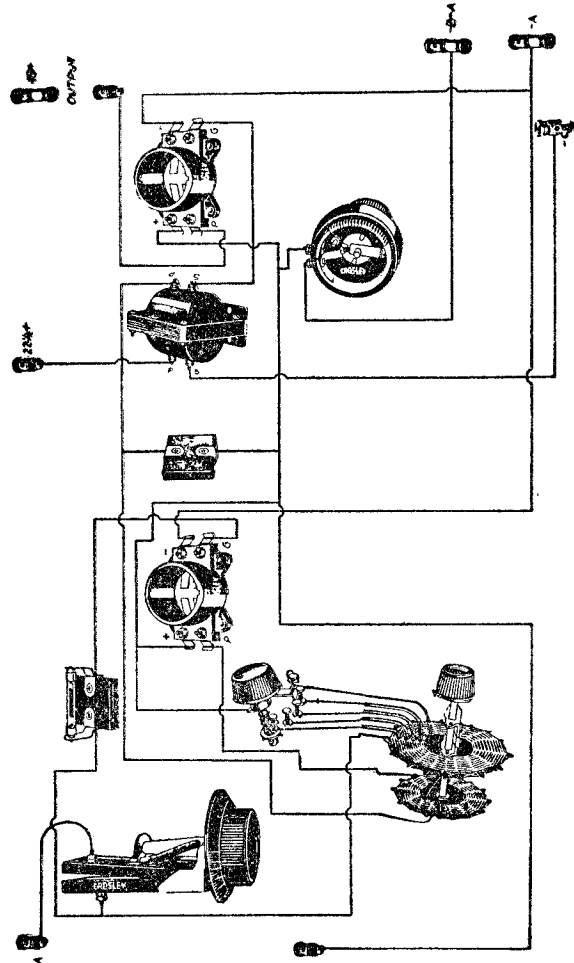
MODEL 5-38



Model 51



MODEL 51

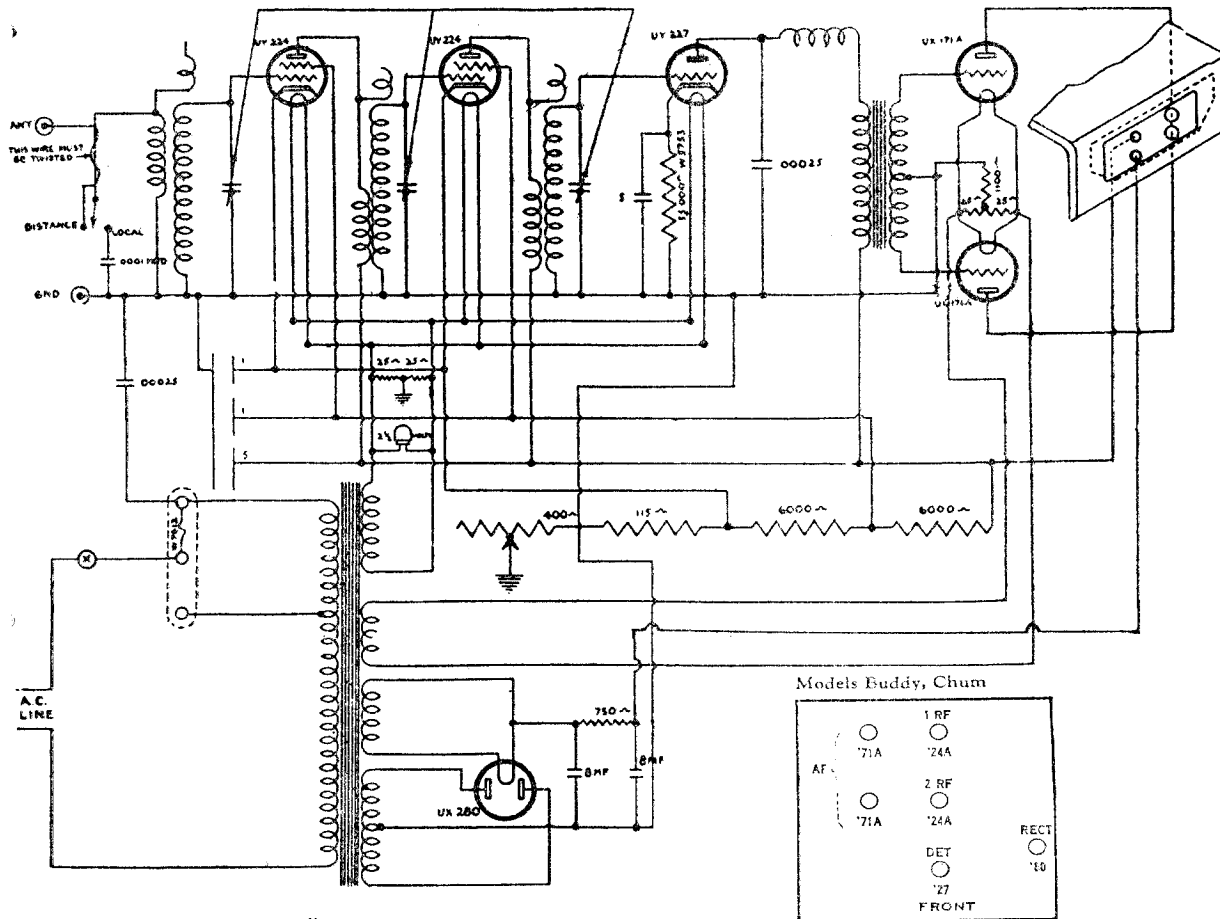


Crosley Model 51 Circuit

MODEL TRIRDYN

MODEL BUDDY, CHUM
Schematic, Voltage

CROSLY RADIO CORP



"BUDDY and CHUM"

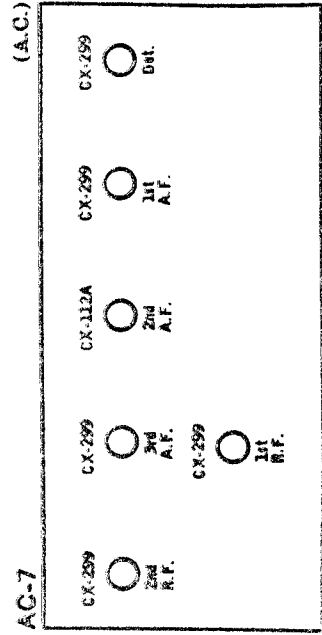
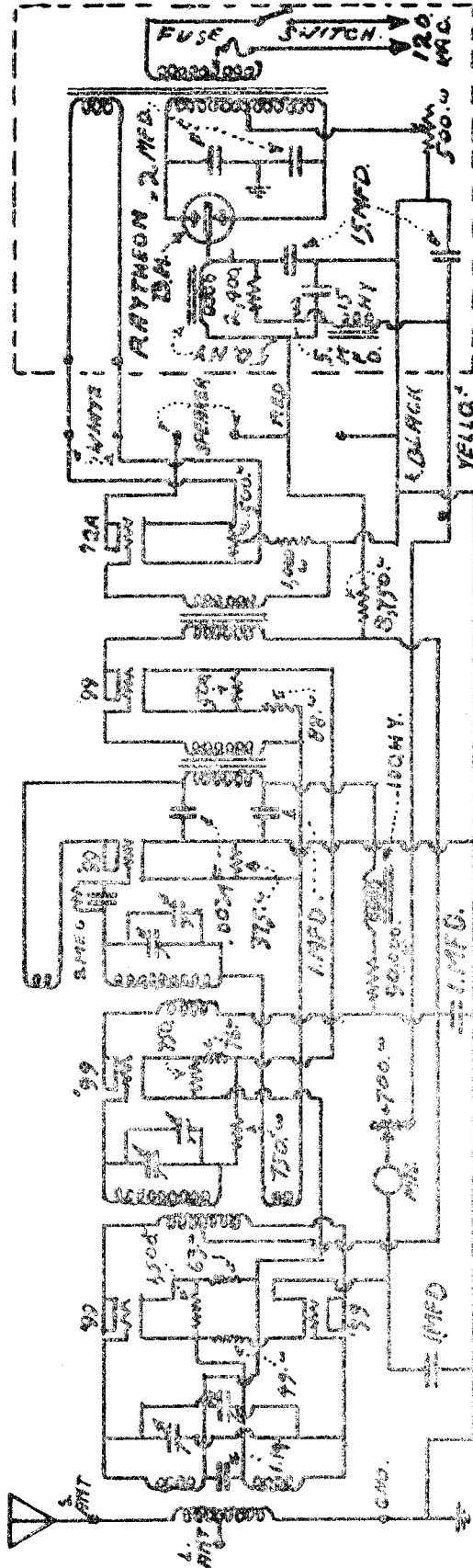
VOLTAGE LIMITS

	Volume Control
	On Full
Filament Voltages	
R.F. and Detector tubes	2.4
A.F. and Rectifier tubes	4.8
--- --	---
Plate Voltages	
All tubes but Rectifier	170
Rectifier tube	250 each
--- --	---
Control Grid Voltages	
R.F. tubes	2.8
Detector tube	12.0 16.0
A.F. tubes	38.0
--- --	---
Screen Grid Voltages	
R.F. tubes	85.0

The above readings are to be taken with the receiver in full operating condition, with the volume control on full, and with a line voltage of 117.5 when the fuse is in the "High" position or of 107.5 when the fuse is on the "Low" position. In the case of 220 volt receivers, the line voltages should be respectively 235 and 215. Measure plate and grid voltages with a high-resistance D.C. voltmeter (at least 800 ohms per volt.) These voltages are to be measured from the plate or grid socket contact to the emitter contact or negative filament contact, unless otherwise noted in the table. The contacts must be reached from the bottom of the receiver (unless a set tester is used) with tubes, dial light, and speaker in place. Use a low-range A.C. voltmeter to measure the filament voltages.

MODEL AC-7
AC-7C

CROSLEY RADIO CORP.

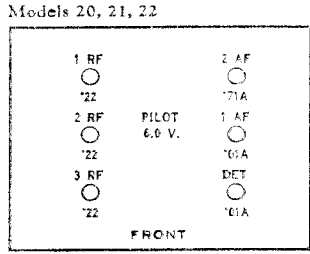
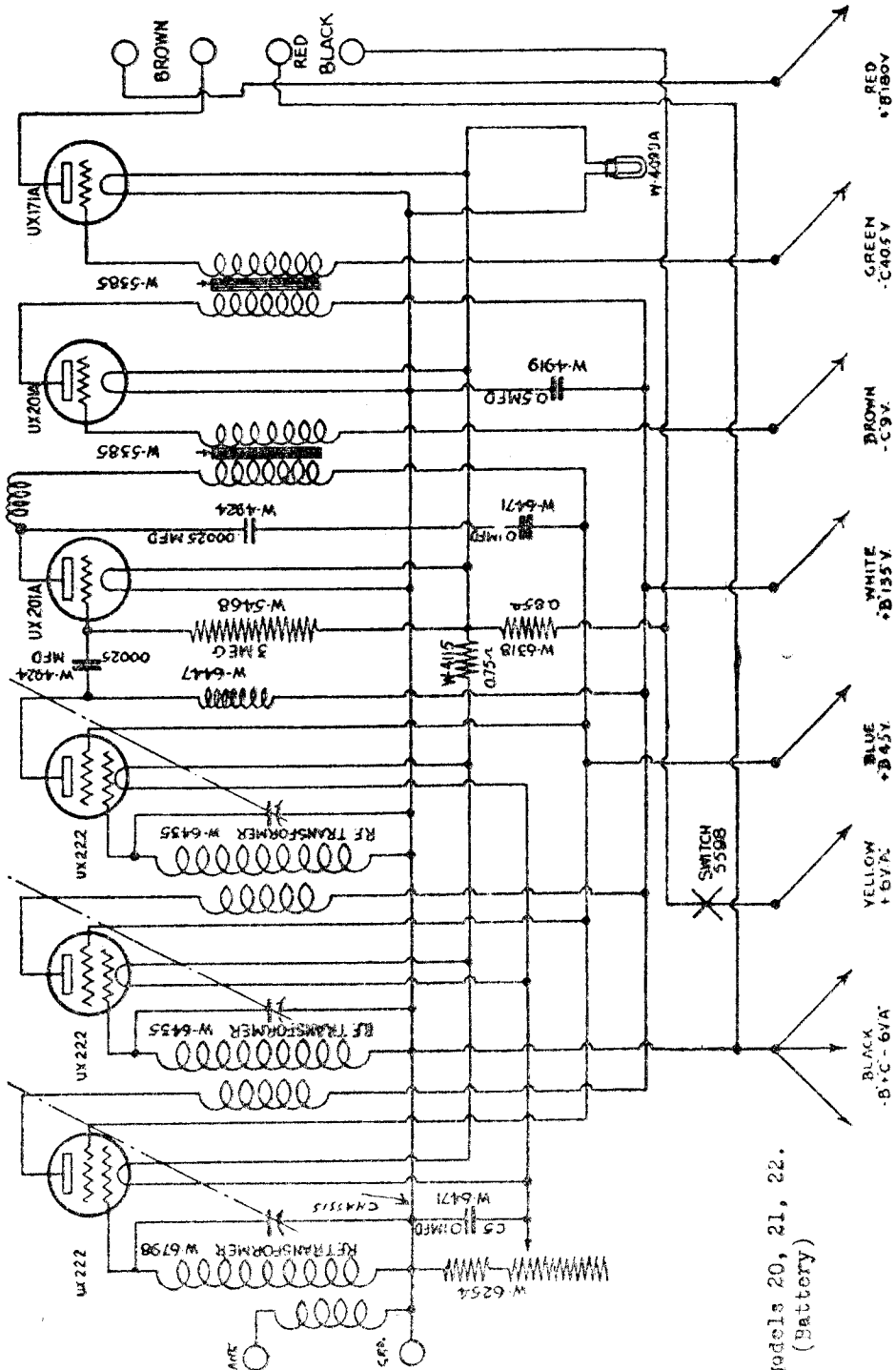


CROSLEY

MODELS AC-7 AND AC-7C

CROSLY RADIO CORP

MODELS 20,21,22
Schematic, Data
MODELS 21,22
Voltage Data



CROSLY—Models 21-22
Line Voltage 115—Volume Control Position Max
Note: Battery operated.

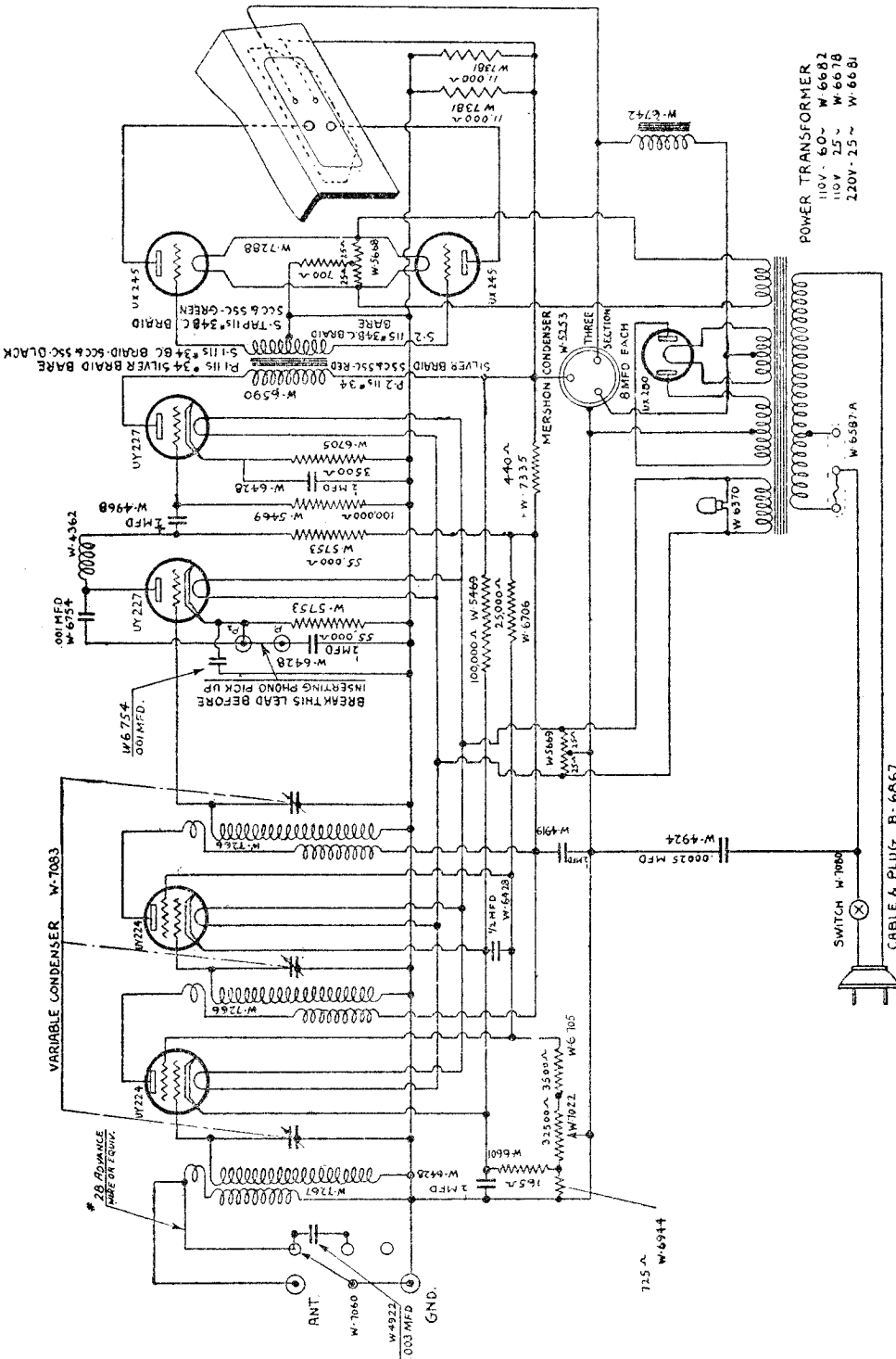
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION ON TUBE (BY EYE)	TUBE DATA					CATHODE HEATER ELEMENTS	CATHODE HEATER VOLTAGE (BY EYE)	PLATE SUPPLY VOLTAGE (BY EYE)	SCREEN SUPPLY VOLTAGE (BY EYE)	CONNECTION
			VOLTS	F	A	B	W					
222	1A4	RF	2.5	125	5.0	135	1.7	—	8.0	1.0	1.0	48
UX222	2X4	RF	3.5	125	5.0	135	1.7	—	8.0	1.0	1.0	48
UX201A	5Y4	5Y4	3.5	125	5.0	135	1.7	—	8.0	1.0	1.0	48
UX171A	6X4	AP	6.0	180	4.0	180	3.0	8.0	6.0	6.0	—	—
222	1A4	RF	2.5	125	5.0	135	1.7	—	8.0	1.0	1.0	48

- The original chassis were built for use with Type E Dynacon. When the type C Dynacon (with separately excited field coils) was introduced, two terminals (Red and Black) were added to the chassis for supplying the field of the "C" type speaker with current direct from the storage battery, or "A" supply. For a short time the yellow and black filament terminals were connected to the points shown by the dotted lines marked "2Y" and "2B".
- In recent changes the 3 megohm resistor W5468 in the detector grid circuit is replaced by an A-2 radio-frequency choke, the 0.85 ohm resistor is moved to the negative filament lead, and the detector grid resistor is connected to the negative side of the 0.85 ohm resistor. See the changes marked "3" on the circuit diagram.

Models 20, 21, 22.
(Battery)

MODELS 30S, 31S, 33S, 34S
Schematic, Voltage, Notes

CROSLLEY RADIO CORP.



ampere cartridge type automobile light fuse (two ampere fuses are also used on recent chassis of the 40S series)

Installation of Model 30S Unitrax chassis, which is the chassis with front panel only for console mounting, is similar to that described on page 29 for Model 40S. Model 31S is in a metal, table type case. Model 33S and 34S are mounted in wooden consoles, with built-in speakers

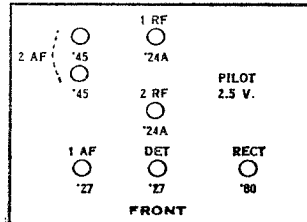
The line voltage should be checked and the chassis fuse inserted in the proper clips as described on page 29 in connection with the 40S series of receivers. If the owner of the receiver complains of tubes burning out too often check the line voltage and see that the fuse is inserted in its proper clips.

If the dial light burns out, replace it with a 2½ volt Mazda miniature base bulb No. 41. If the fuse requires to be replaced use a two

CROSLLEY—63 Chassis
Models 30S, 31S, 33S, 34S and Playmate.

TUBE NO. IN ORDER LISTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID-SPACE (G1)	SCREEN GRID-SCREEN (G2)	CATHODE TO HEATER	SCREEN GRID TO PLATE	PLATE TO GRID	TUBE TEST	PLATE CURRENT (CHANS)	
224	1 R.F.	2,43	153	-1.4	65	1.2	-	2.95	6.	3.03		
224	2 R.F.	2,43	153	-1.4	65	1.2	-	2.65	5.25	2.4		
227	Det.	2,4	114	-	-10.9	11.8	-	.3	.39	.9		
227	1 A.F.	2,45	140	-	-4.	10	-	2.65	3.6	.75		
245	2 A.F.	2,35	224	-	-42.5	-	-	30.	33.6	4.6		
246	2 A.F.	2,35	224	-	-42.5	-	-	30.	33.6	4.6		
260	Rect.	5,1	-	-	-	-	-	55	55	-		

Models 30-S, 31-S, 33-S, 34-S

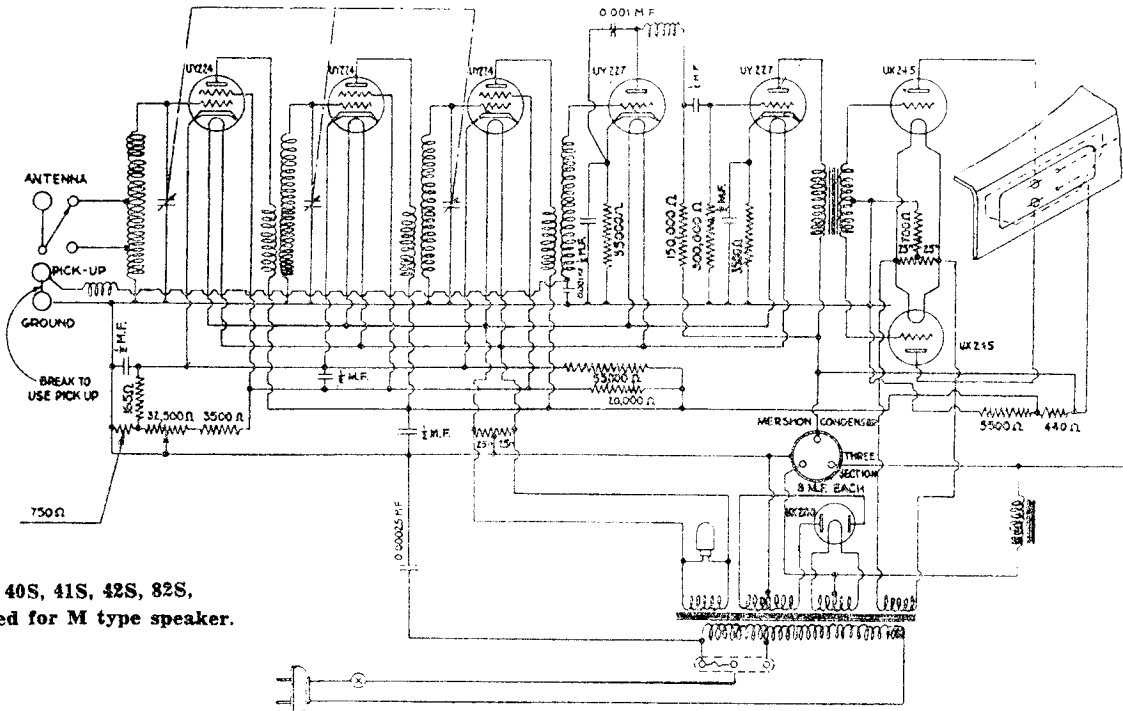


Installation

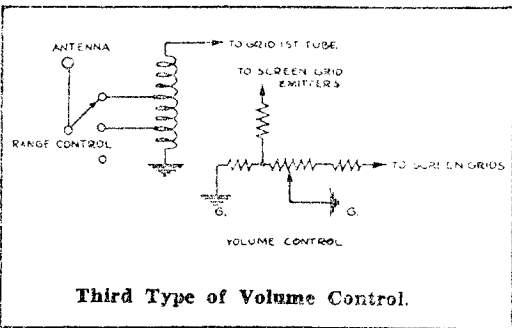
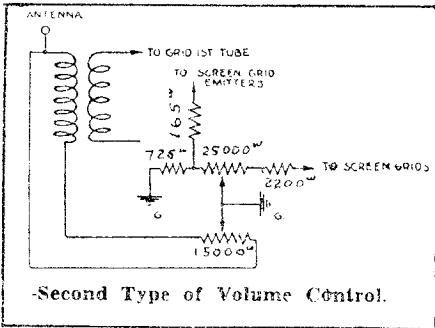
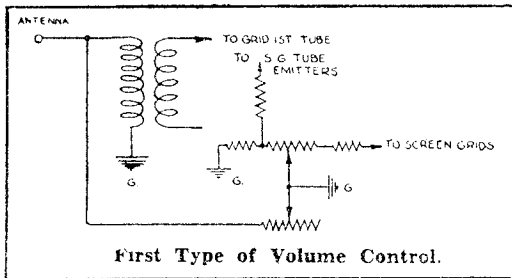
These receivers are designed for operation with Type M Dynacoil speakers. The chassis is equipped with a socket into which a plug on the end of the speaker cord fits. Although not shown on page 29, the more recently built chassis of the 40S series are equipped with sockets for Type M Dynacoil speakers instead of with terminals for Type J Dynacoils.

CROSLEY RADIO CORP. MODELS 40S, 41S, 42S, 82S
Schematic, Voltage

For model 41S receiver, a Dynacoil speaker type J, model 244, is required.



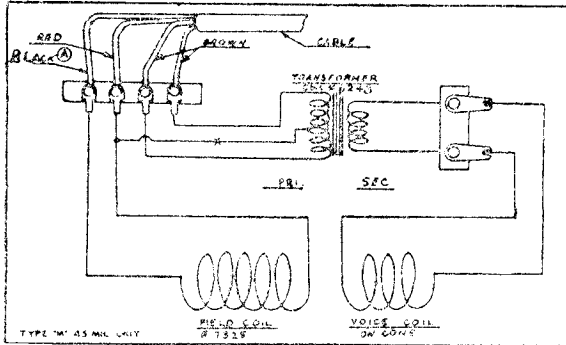
Models 40S, 41S, 42S, 82S, arranged for M type speaker.



CROSLEY—73 Chassis—Models 40S-41S-42S-82S
Line Voltage 117.5—Set on High Volt Tap—Volume Control Position Max

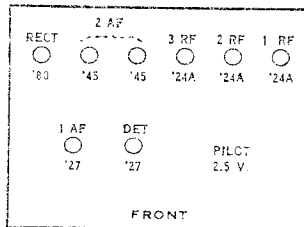
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE	READINGS, PLUG IN SOCKET OF SET															
			TUBE OUT		TUBE IN		TUBE IN		TUBE IN		TUBE IN							
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	F VOLTS	G VOLTS	H VOLTS	I VOLTS	J VOLTS	K VOLTS	L VOLTS	M VOLTS	N VOLTS
1	224	1st RF	2.50	1.90	2.40	1.75	1.5	1.5	1.5	4.0	2.5	70						
2	224	2nd RF	2.60	1.60	2.40	1.75	1.5	1.5	1.5	4.0	2.5	70						
3	224	3rd RF	2.60	1.80	2.40	1.75	1.5	1.5	1.5	4.0	2.5	70						
4	227	Det.	2.60	1.00	2.45	1.00	1.4	1.2	1.2	4.0	1.1							
5	227	1st AF	2.55	2.00	2.45	1.80	1.5	1.2	1.2	4.0	1.0							
6	245	2nd AF	2.55	2.55	2.50	2.40	4.0	-	2.5	3.0	4.0							
7	245	2nd AF	2.55	2.55	2.50	2.40	4.0	-	2.5	3.0	4.0							
8	230	Rect.	5.60	-	5.00	-	-	-	1.00	-	-							

Models 42S and 82S are equipped with Dynacoil speakers, type J, model 255.



For model 40S receiver, Dynacoil type J, model 254 is supplied.

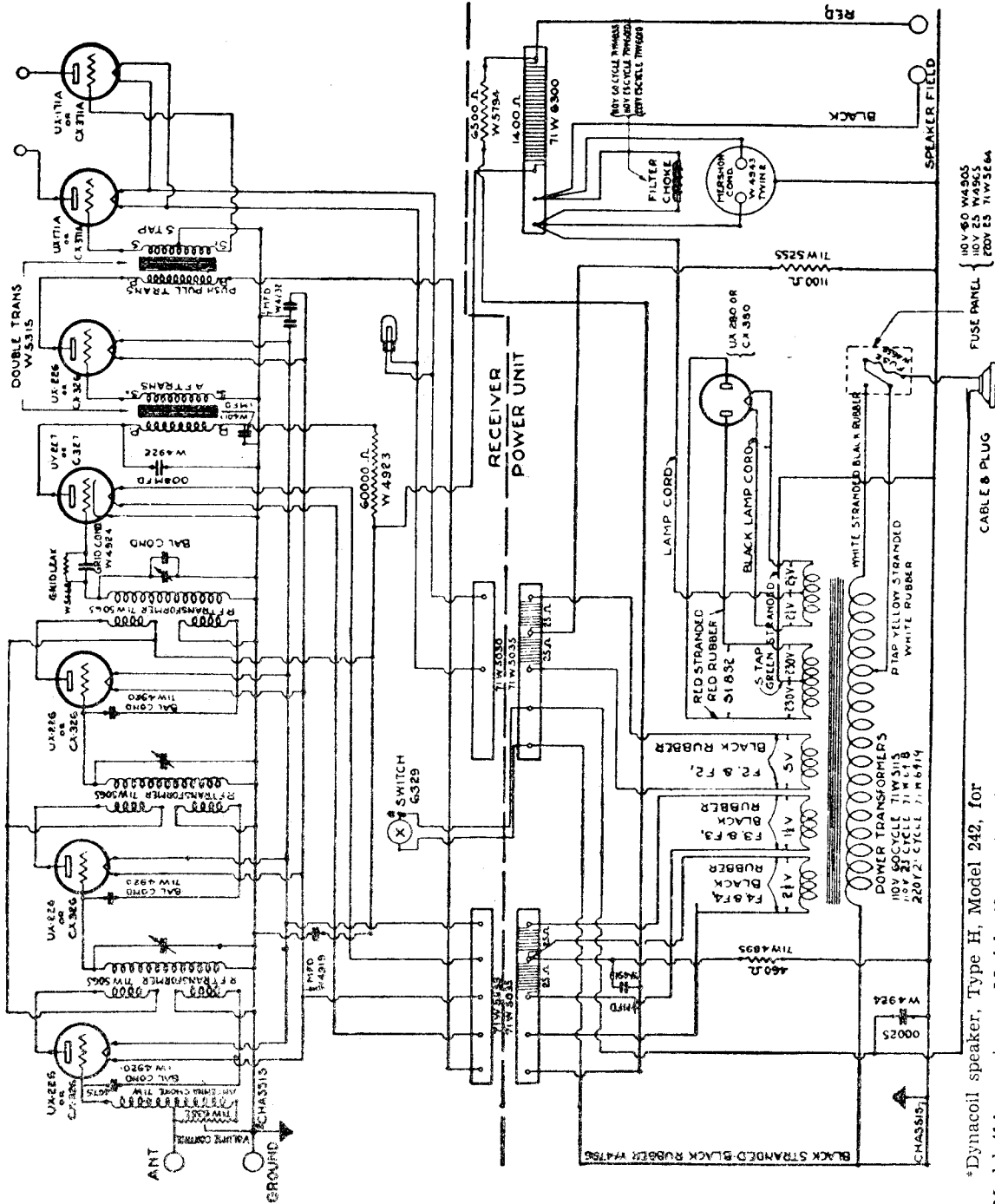
Models 40-S, 41-S, 42-S, 82-S



(ABOVE)
Connections for Dynacoils Types G, H, J, M
Red and Black leads to field coil. Brown leads to speaker output transformer.

MODELS 41, 41A, 42
Schematic, Voltage

CROSLEY RADIO CORP.



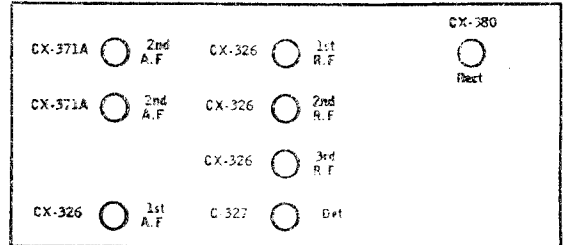
*Dynacoil speaker, Type H, Model 242, for Model 41A receiver Model 42 receiver is equipped with built-in Dynacoil speaker, Type H, Model 243.

*Note—Mershon Condenser in set will probably be ruined if speaker field circuit is opened while set is in operation.

CROSLEY—Models 41-41A-42-704-706
Line Voltage 117.5—227 Emitter Eased 11 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

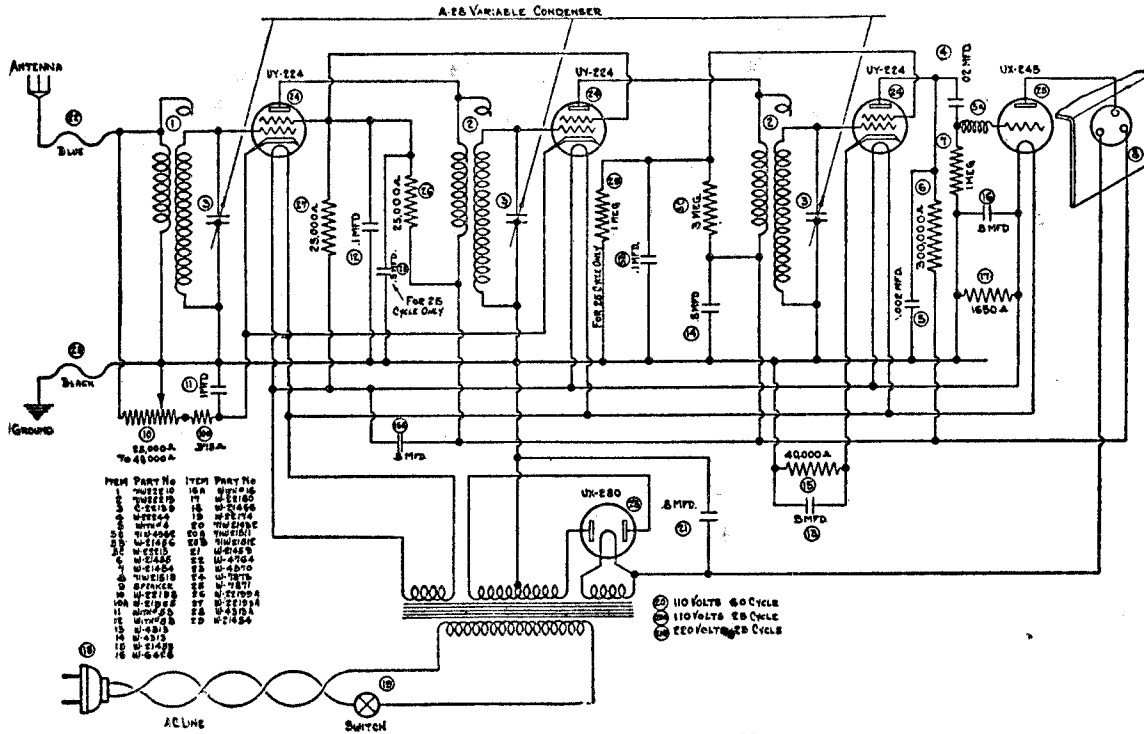
TUBE NO. OR ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET ETC.	MEASUREMENTS MADE IN SHEET OF SET						TUBE IN TESTER		
			VOLTS	VOLTS	AMPS	VOLTS	WATTS	WATTS	PLATE M.A.	PLATE M.A.	PLATE M.A.
225	1st. A.P.	1.7	160	1.5	350	11.7	6.5	12.0	8.5		
225	2nd. R.F.	1.6	120	1.5	350	11.7	6.5	13.4	6.9		
225	3rd. R.F.	1.6	120	1.5	350	11.7	6.5	13.4	6.9		
227	Detector	2.90	190	1.25	30	6.0	2.2	2.76	0.66		
226	1st. A.P.	1.6	220	1.5	120	8.0	6.2	8.0	1.8		
171A	2nd. A.P.	5.3	185	5.0	190	37.25	20.0	25.0	3.0		
171A	2nd. A.P.	5.3	165	5.0	190	37.25	20.0	25.0	3.0		
280	Rectifier	5.5	4.5								

32, 40, 41, 41A, 42 (A.C.)



CROSLEY RADIO CORP.

MODEL 48
Schematic, Voltage



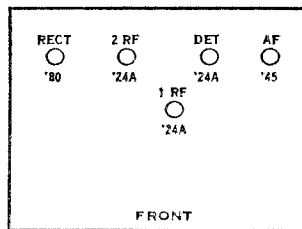
Circuit Diagram Model 48

Voltage Limits

To be measured with tubes in place, speaker connected, and line voltage of 117 1/2 (235 for 220 volt receivers). Measure plate and grid voltages with a high-resistance D. C. volt-meter (600 ohms or more per volt) from plate or grid socket contact to emitter contact. Use a low-range A. C. meter to measure filament voltages.

Filament Voltages	
All tubes but rectifier	2.3 to 2.5
Rectifier tube	4.6 to 4.8
Plate Voltages	
R. F. amplifier tubes	160 to 190
Detector tube	105 to 125
A. F. amplifier tube	125 to 155
Rectifier tube	220 A. C.
Screen Grid Voltages	
R. F. amplifier tubes	80 to 90
Detector tube	40 to 50
Control Grid Voltages	
R. F. amplifier tubes	2.5 to 3.1
Detector tube	6.0 to 7.0
A. F. amplifier tube	25 to 35

Model 48



Installation Notes

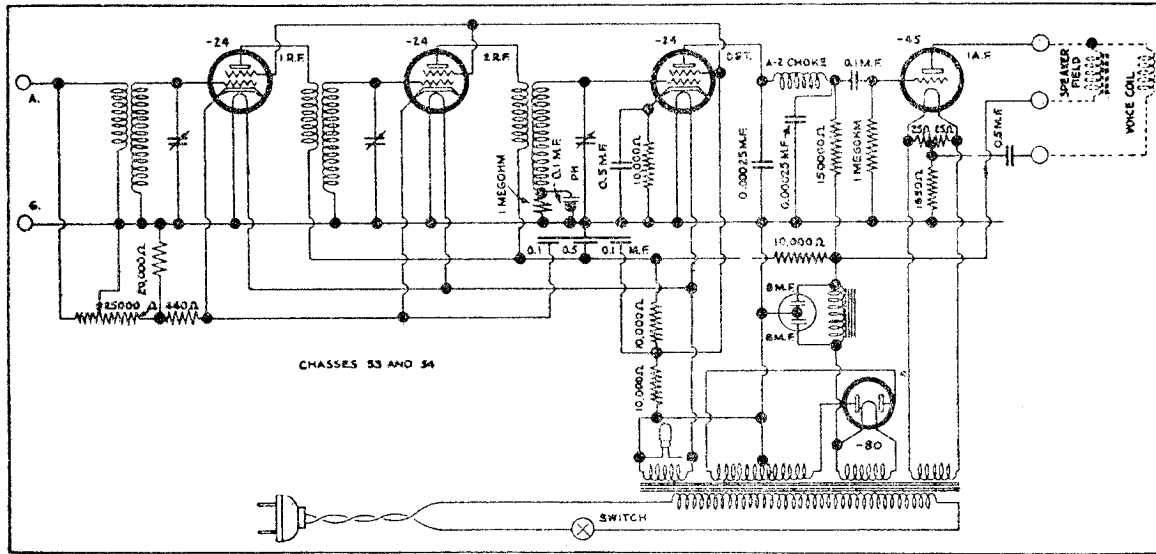
Because of the low sensitivity of this chassis it is better to use a comparatively large aerial with it if possible. A good ground should, of course, be used.

One must be careful in inserting the speaker plug not to force it in when the prongs are improperly lined up with the socket holes.

This model employs the following tubes: two -24 screen grid amplifiers, a -24 screen grid detector, a -45 power output amplifier, and a -80 rectifier.

MODEL 53,54,57
Schematic, Voltage

CROSLLEY RADIO CORP.



Circuit Model 53 (see note below regarding Models 54 and 57)

Circuit, Models 54 and 57

Model 54 circuit differs from that shown in the diagram in the following particulars: The "PH" terminals are between the r. f. transformer coil and the 0.1 m. f. condenser, instead of between this condenser and ground, as shown. The triple unit condenser near the center of the diagram has values, from right to left, of 0.1, 0.1, 0.5 microfarads, instead of those shown. There is no dial light on Model 54.

Model 57 differs in circuit from the above description in the following particulars: An additional condenser of 0.25 m. f. capacity is shunted across the filter choke. The primary of the speaker output transformer is connected in the position in which the speaker field is shown in the above diagram. Instead of being connected to the 1650 ohm resistor through a condenser, as shown in the above diagram, the bottom speaker terminal is connected to ground. The speaker field is connected from this grounded terminal to the middle speaker terminal on the diagram, so that current from the positive "B" circuit flows through the speaker field to ground. A fixed condenser is shunted across the 1650 ohm output biasing resistor.

Voltage Limits

Filament Voltages

R. F. and Detector Tubes.....	2.1 to 2.3
A. F. Tube.....	2.2 to 2.4
Rectifier Tube.....	4.1 to 4.3

Plate Voltages

R. F. Tubes.....	160 to 180
Detector Tube.....	215 to 245
A. F. Tube.....	230 to 260
Rectifier Tube (A. C. Voltage).....	340 to 370 each plate

Control Grid Voltages

R. F. Tubes.....	3.1 to 3.5
Detector Tube.....	9.0 to 10.0
A. F. Tube.....	45.0 to 50.0

Screen Grid Voltages

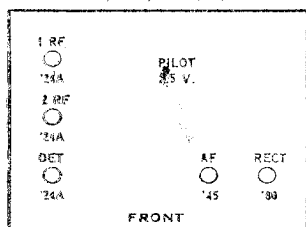
R. F. and Detector Tubes.....	85 to 95
-------------------------------	----------

Approximate Plate Current Values

R. F. Tubes	0.0032
Detector Tube	0.00035
A. F. Tube	0.0335
Rectifier Tube	0.045

To be measured with speaker connected, tubes in place, and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltages of the detector and audio tubes, which should be measured from the emitters to the chassis. The filaments of the output and rectifier tubes serve as the emitters, while the other tubes have heaters and separate emitters. Measure filament voltages with a low-range A. C. voltmeter.

Models 53E, 53F, 53M, 57V

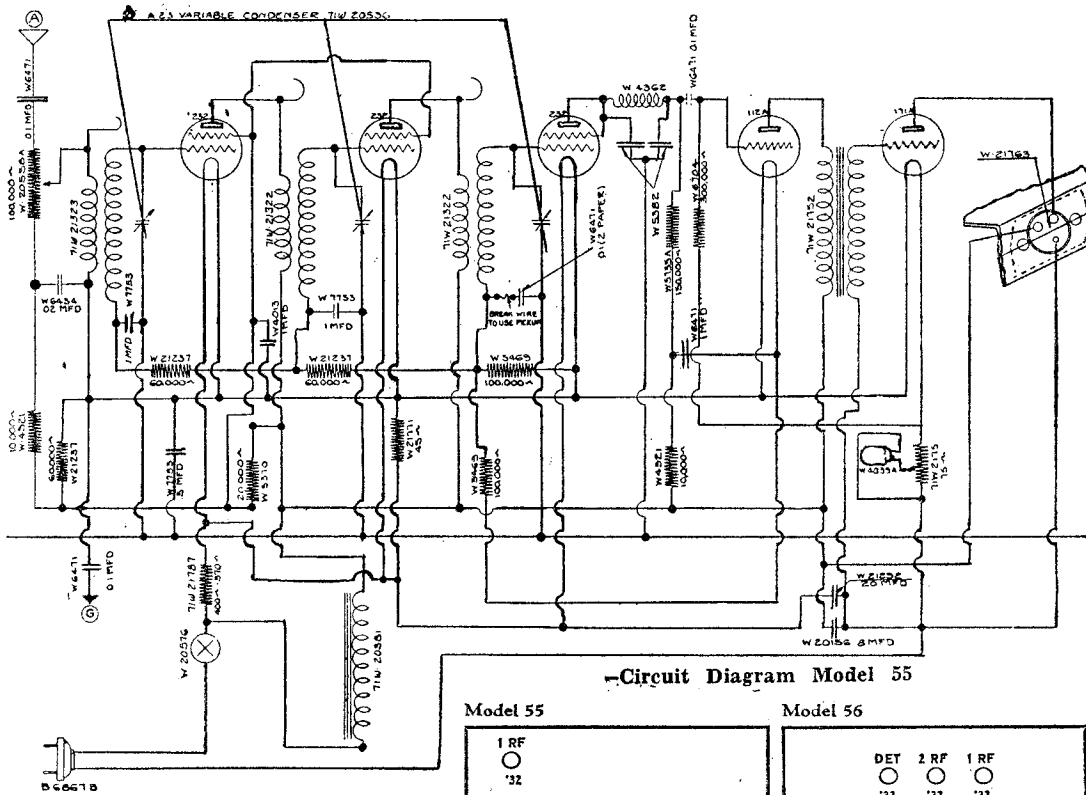


- Black0 Orange3 Violet7
Brown1 Yellow4 Gray8
Red2 Green5 White9
Blue6

For example, a resistor with orange body color, green end color, and a red dot has a resistance of 3500 ohms.

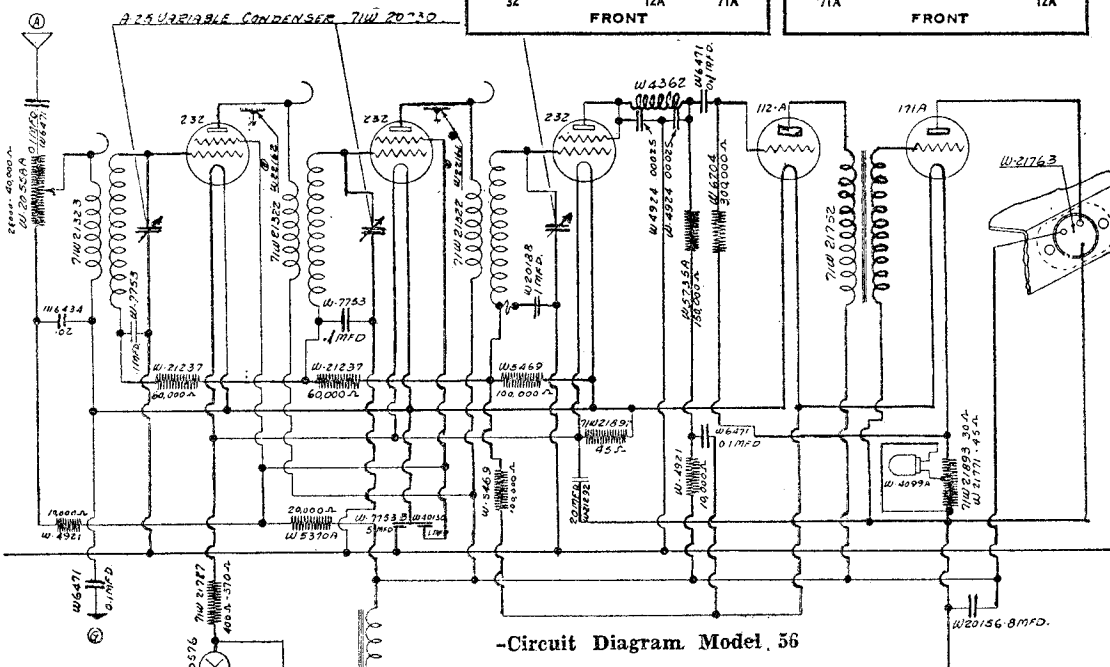
CROSLY RADIO CORP.

MODEL 55
MODEL 56
Schematic
Voltage



-Circuit Diagram Model 55

Model 55		Model 56	
1 RF		DET	2 RF
'32		'32	'32
2 RF			1 RF
'32			'32
DET		PILOT 6.0 V.	
'32		2 AF	1 AF
	1 AF	'71A	'12A
	'12A		
	2 AF		
	'71A		
		FRONT	FRONT



-Circuit Diagram Model 56

Screen Grid Voltages (Volume Control On)

R.F. Tube	40 to 55
Detector Tube	20 to 30

Plate Voltages

R. F. Tubes	80 to 90
Detector Tube	20 to 30
1st A. F. Tube	75 to 90
Output Tube	85 to 100

Control Grid Voltages

R. F. and Detector Tubes	1.2 to 1.8
1st A. F. Tube	4.0 to 5.0
Output Tube	10.0 to 15.0

Filament Voltages

R. F. and Detector Tubes	1.5 to 2.0
A. F. Tubes	4.2 to 5.0

MODEL 55
 MODEL 56
 Parts Lists

CROSLLEY RADIO CORP.

Parts List Model 55

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

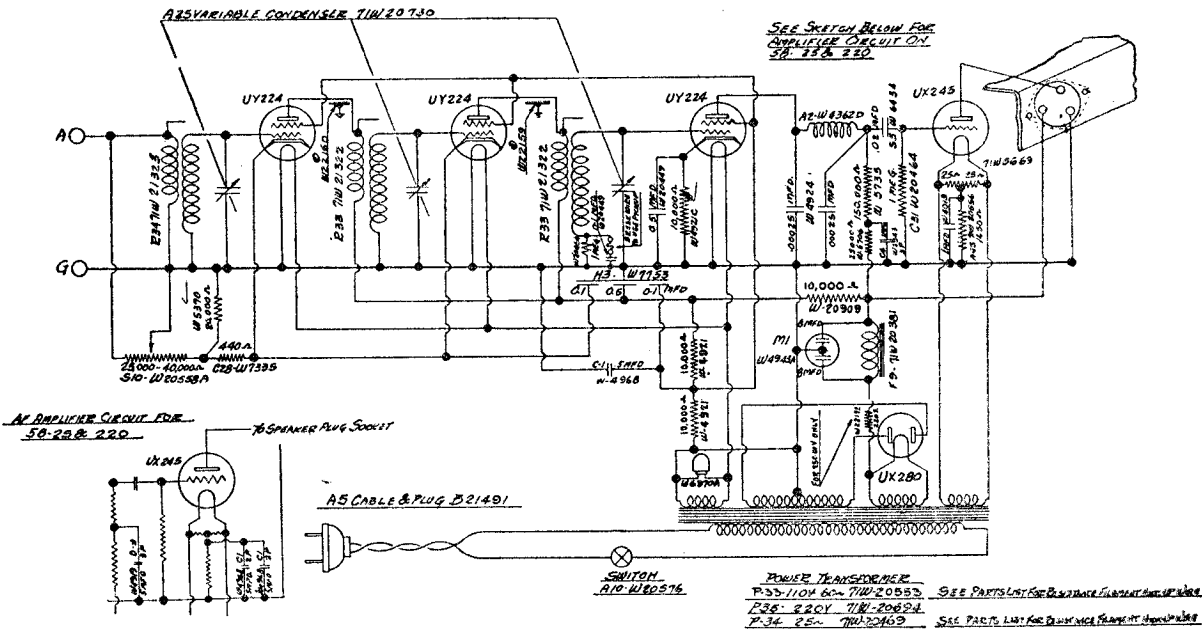
Qty.	Part No.	Description	List Price Each	Qty.	Part No.	Description	List Price Each
1	D-21761	Chassis	2.00	2	W-5382	0.00025 Mfd. Fixed Condenser	.35
5	W-7871	Socket (4 Prong) .....	.25	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
2	W-7874	Socket Guide .....	.10	1	W-5460	Resistor 100,000 ohms (brown, black, yellow spot)	.60
5	W-21322	R. F. Transformer	2.50	2	W-21237	Resistor 60,000 ohm	.60
1	W-21323	R. F. Transformer (Ant.)	2.50	1	W-6434	0.02 Mfd. Fixed Condenser	.60
3	W-21739	Grid Connectors .....	.25	1	W-20040	Resistor Assembly	1.00
3	B-21174	R. F. Coil Shield .....	.50	1	W-5713	Mounting Strip	.25
1	W-20558	Volume Control	1.75	1	W-4921	Resistor 10,000 ohms	.60
1	W-20530	Variable condenser gang	18.00	1	W-4362	Plate Choke	.50
1	W-20981	Spider .....	.30	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser	2.00
1	W-7154	Dial Gear .....	.15	1	W-4013	1. Mfd. Fixed Condenser (2 paper)	1.35
1	W-5590	Set Screw .....	.05	1	W-6471	0.1 Mfd. Fixed Condenser	1.00
1	W-5354D	Dial Indicator .....	.25	1	W-21754	Resistor Assembly	3.15
1	W-4899	Pinion .....	.35	1	W-21771	Mounting Strip & Resistance (45 ohm)	.45
1	W-20594	Pinion Bracket (inner) .....	.15	1	W-5735	Resistor 150,000 ohms (brown, green, yellow spot)	.60
1	W-20595	Pinion Bracket (outer) .....	.15	1	W-4921	Resistor 10,000 ohms (brown, black, orange spot)	.60
1	W-4907	Spring Washer .....	.05	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)	.60
1	W-20722	Dial Light Bracket .....	.25	1	W-6704	Resistor 300,000 ohms (orange black, yellow spot)	.60
1	W-20576	Power Switch .....	.75	1	W-20630	Bottom Bracket	.10
1	B-21762	Chassis Plate .....	.15	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
1	W-20156	8 Mfd. Condenser	5.00	1	W-21751	Resistance Assembly (45-30 ohms)	.40
1	W-21760	Filament drop resistor (400-370 ohms)	1.00	1	W-21798	Junction Block	.10
1	W-21770	Filament drop resistor bracket .....	.10	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
2	W-4435	Asbestos Washer .....	.05	1	W-20883	Terminal (A. G. & P. H.)	.50
1	W-20881	Filter Choke	3.25	1	W-21763	Speaker Terminal Socket	.40
1	W-21292	Electrolytic Condenser (20 mfd.)	2.00	1	B-6867	Cable	1.50
1	W-21752	A. F. Transformer	5.00	1	C-21581	R. F. Shield Assembly	1.25
PARTS UNDER CHASSIS				1	C-20658	Chassis Bottom	.50
1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00	1	W-20167	Knob (large)	.40
1	W-21100	Resistor Assembly	1.00	2	W-20482	Knob (small)	.35
	W-5713	Mounting Strip	.25				
	W-5370	Resistor 20,000 ohms (red, black, orange spot)	.60				
1	W-21237	Resistor 60,000 ohms (blue, black, orange spot)	.60				

Parts List Model 56

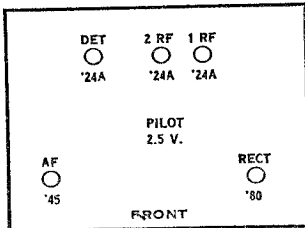
Qty.	Part No.	Description	List Price Each	Qty.	Part No.	Description	List Price Each
1	C-21900	Chassis	1.75	1	W-6434	0.02 Mfd. Fixed Condenser	.60
5	W-7871	Socket (4 prong) .....	.25	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser	2.00
5	W-7874	Socket Guide .....	.10	1	W-4013	1. Mfd. Fixed Condenser (2 paper)	1.35
1	W-20558	Volume Control	1.75	1	W-21237	Resistor (60,000 ohms) Blue, black, orange	.60
1	W-21752	A. F. Transformer	5.50	1	W-5469	Resistor 100,000 ohms Brown, black, yellow	.60
1	W-21760	Filament Drop Resistor (400-370 ohms)	1.00	1	W-21237	Resistor (60,000 ohms)	.60
1	W-21770	Filament Drop Resistor Bracket	.10	3	W-21127	Stiffened Sleeving (3-8"x2")	.05
2	W-4435	Asbestos Washer	.05	1	W-20873	Bottom Bracket	.10
1	W-20730	Variable Condenser Gang	18.00	2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
1	W-20981	Spider	.30	1	W-21895	Fixed Resistance Assembly	2.50
1	W-22093	Dial	.25	1	W-21771	Resistance and mounting strip (45 ohms)	.45
1	W-22094	Dial Strip	.25	1	W-5735	Resistor 150,000 ohms (Brown, green, yellow)	.60
1	W-20977	Dial Band	.20	1	W-6704	Resistor 300,000 ohms (Orange, black, yellow)	.60
2	W-21322	R. F. Transformers	2.50	1	W-4921	Resistor 10,000 ohms (Brown, black, orange)	.60
1	W-21223	R. F. Transformers (antenna)	2.50	1	W-21894	Resistance Assembly	2.35
3	W-21739	Grid Connectors	.25	1	W-6028	Mounting Strip	.30
3	W-21257	R. F. Coil Shields	.50	1	W-4921	Resistor (10,000 ohm Brown, black, orange)	.60
1	C-20871	R. F. Shield	1.25	1	W-5469	Resistor (100,000 ohm) Brown, black, yellow	.60
1	W-20576	Power Switch	.75	1	W-5370	Resistor (20,000 ohm) Red, black, orange	.60
1	W-22090	Dial Light Bracket	.25	1	W-21292	20 Mfd. Condenser	2.00
1	W-21901	Chassis Plate	.15	1	B-21491	Cable	1.50
1	W-20381	Filter Choke	3.25	1	C-20872	Chassis Bottom	.50
1	W-20156	Condenser (8 Mfd. 2 paper)	5.00	2	W-20482	Knob (Small)	.35
1	W-21763	Speaker Terminal	.40				
1	W-20883	Terminal A. G. & P. H.	.50				
PARTS UNDER CHASSIS							
1	W-21893	Fixed Resistance (30 ohm)	.40				
1	W-21892	Fixed Resistance (45 ohm)	.40				
1	W-20188	0.1 Mfd. Fixed Condenser	.60				
1	W-4362	Plate Choke	.50				
2	W-4924	0.00025 Mfd. Fixed Condenser	.35				
2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00				

CROSLY RADIO CORP.

MODEL 58
Schematic
Parts List



Models 54G, 58Q *



Circuit Diagram Model 58

For Voltage Data See Model 54

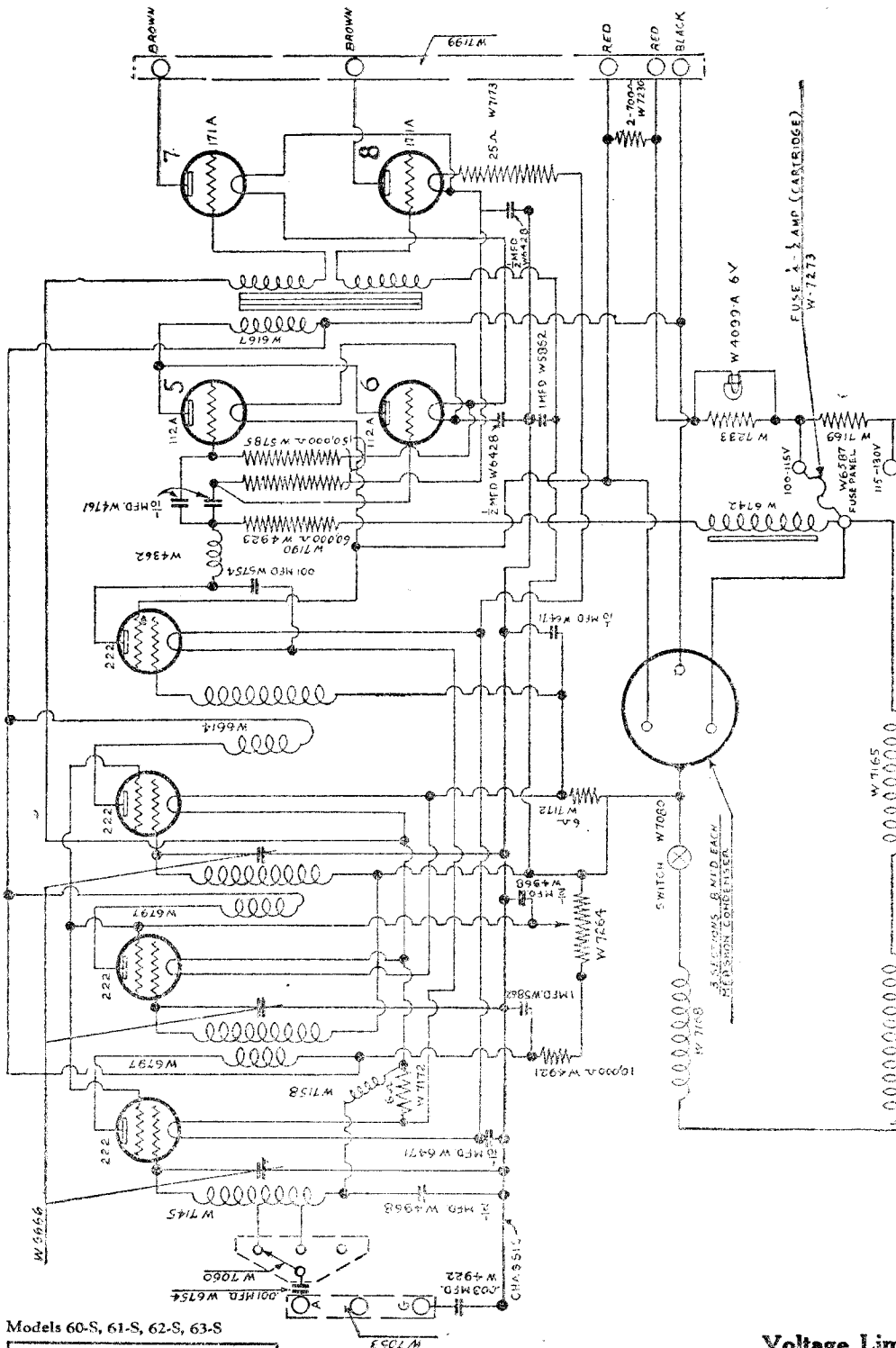
Parts List—Model 58

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	List Price	Qty.	Part No.	Description	List Price
			Each				Each
1	W-21569	Chassis	1.75	PARTS UNDER CHASSIS			
3	W-7873	Socket (5 Prong) .....	.30	1	W-5669	25 -25 ohm Resistance .....	.40
2	W-7871	Socket (4 Prong) .....	.25	1	W-20556	1650 ohm Resistance .....	.35
1	W-21518	Speaker Socket .....	.40	1	W-5943	.1 Mfd. Fixed Condenser	1.10
4	W-7874	Socket Guide .....	.10	2	W-4924	.00025 Mfd. Fixed Condenser .....	.35
1	W-21297	Socket Guide (280) .....	.10	1	W-4362	Plate Choke .....	.50
1	W-20883	Terminal Board (A. G. & Ph.) .....	.50	1	W-6434	.02 mfd. Fixed Condenser .....	.60
1	W-20558	Volume Control	1.75	1	W-4013	1. mfd. Fixed Condenser	1.35
1	W-20351	Filter Choke	3.25	1	W-20449	.5 -.1 mfd. Fixed Condenser	1.25
1	W-4943	Mershon Condenser	4.25	1	W-7753	.1 -.5 -.1 mfd. Fixed Condenser	2.00
2	W-5033	Condenser Clamp .....	.15	1	W-4968	.5 mfd. Fixed Condenser	1.20
1	W-4946	Condenser Cap .....	.25	1	W-21955	3250 ohm Candohm Resistance .....	.80
1	W-20730	Variable Condenser Gang	18.00	1	W-21956	3160 ohm Candohm Resistance .....	.30
1	W-22090	Dial Light Bracket Assembly .....	.40	1	W-22043	Mounted Resistor Assembly	2.35
1	W-22095	Dial Drum Assembly .....	.80	1	W-20699	Mounting Strip .....	.30
1	W-22094	Dial Indicator Cover .....	.25	1	W-5735	150,000 ohm Resistor .....	.60
	W-20977	Dial Band .....	.20	1	W-5370	20,000 ohm Resistor .....	.60
2	W-21322	R. F. Transformer	2.50	1	W-6706	25,000 ohm Resistor .....	.60
1	W-21323	R. F. Transformer (Antenna)	2.50	1	W-22082	Mounted Resistor Assembly	3.00
3	W-21739	Grid Connector .....	.25	1	W-20089	Mounting Strip .....	.30
3	W-21257	R. F. Coil Shield .....	.50	1	W-4921	10,000 ohm Resistor .....	.60
1	W-20576	Power Switch .....	.75	2	W-20464	1 Meg. Resistor .....	.60
1	W-22025	Power Transformer (110 V. 60 Cycle)	13.00	1	W-7335	440 Ohm Resistor .....	.60
2	W-21597	Tie Straps .....	.10	1	B-21491	Cable	1.50
1	C-20671	R. F. Shield	1.25	1	C-20672	Chassis Bottom .....	.50
				1	W-20873	Bottom Bracket .....	.10
				2	W-20482	Knob .....	.35
					W-7947	Knob Spring .....	.65

MODELS 60S, 61S, 62S, 63S
Schematic, Voltage

CROSLLEY RADIO CORP.

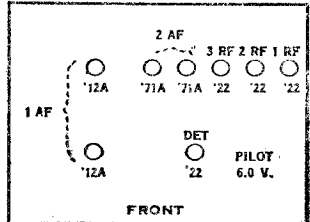


Control Grid Voltages	
R. F. Tubes	1.4 to 2.3
Detector tube	4.0 to 5.5
112A A. F. tubes (measured to low side of grid resistor)	4.2 to 5.5
Output tubes	14.0 to 19.0
Screen Grid Voltages	
1st R. F. tube	47 to 67
2nd and 3rd R. F. tubes	50 to 70
Detector	14 to 34

90 to 100	66 to 76
93 to 103	72 to 82
95 to 105	77 to 87
64 to 74	31 to 91

Plate Voltages	
1st R. F. tube	.....
2nd R. F. tube	.....
3rd R. F. tube	.....
Detector tube	.....
A. F. Tube No. 5 (see circuit diagram for this and following tube numbers)	.....
A. F. tube No. 5	.....
Output tube, No. 7	.....
Output tube, No. 8	.....

Models 60-S, 61-S, 62-S, 63-S



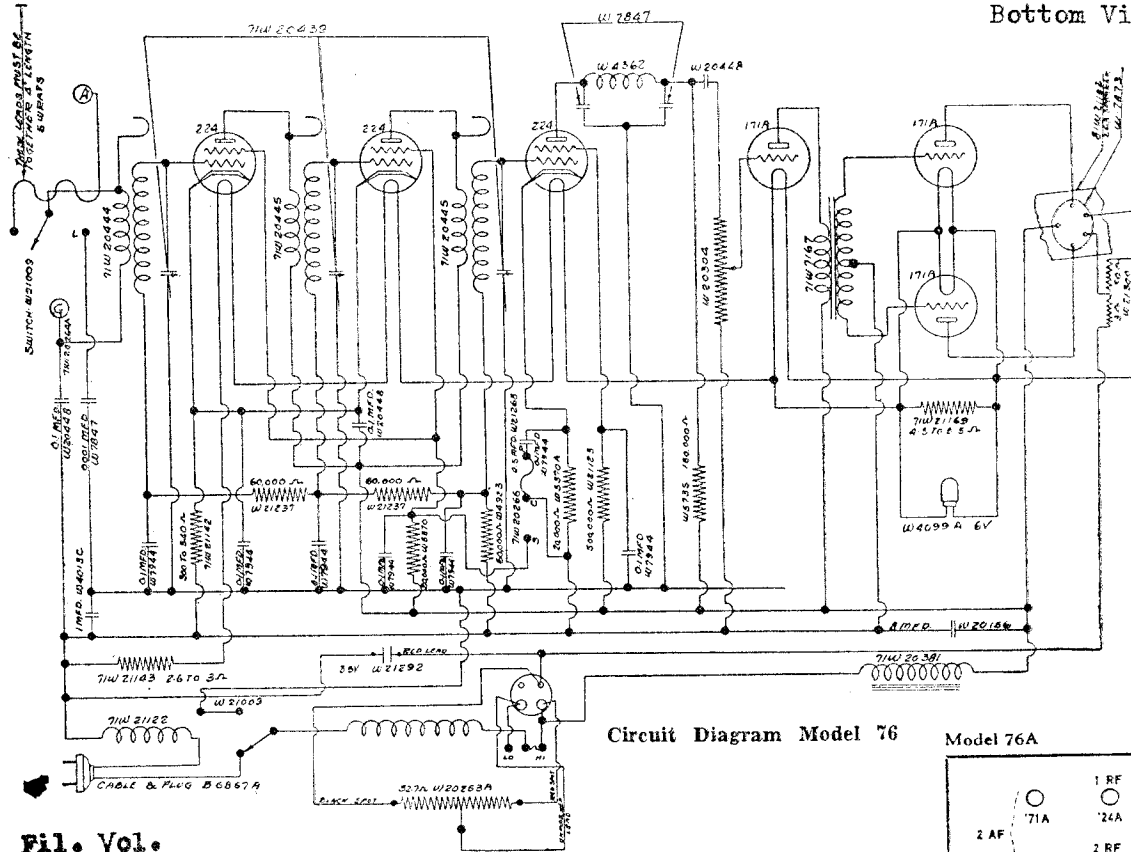
Voltage Limits

Filament Voltages	
R. F. and Detector tubes	2.6 to 3.4
All A. F. tubes	4.2 to 5.5

Volume Control on Full	
90 to 100	66 to 76
93 to 103	72 to 82
95 to 105	77 to 87
64 to 74	31 to 91

CROSLY RADIO CORP.

MODEL 76
Schematic, Voltage
Bottom View



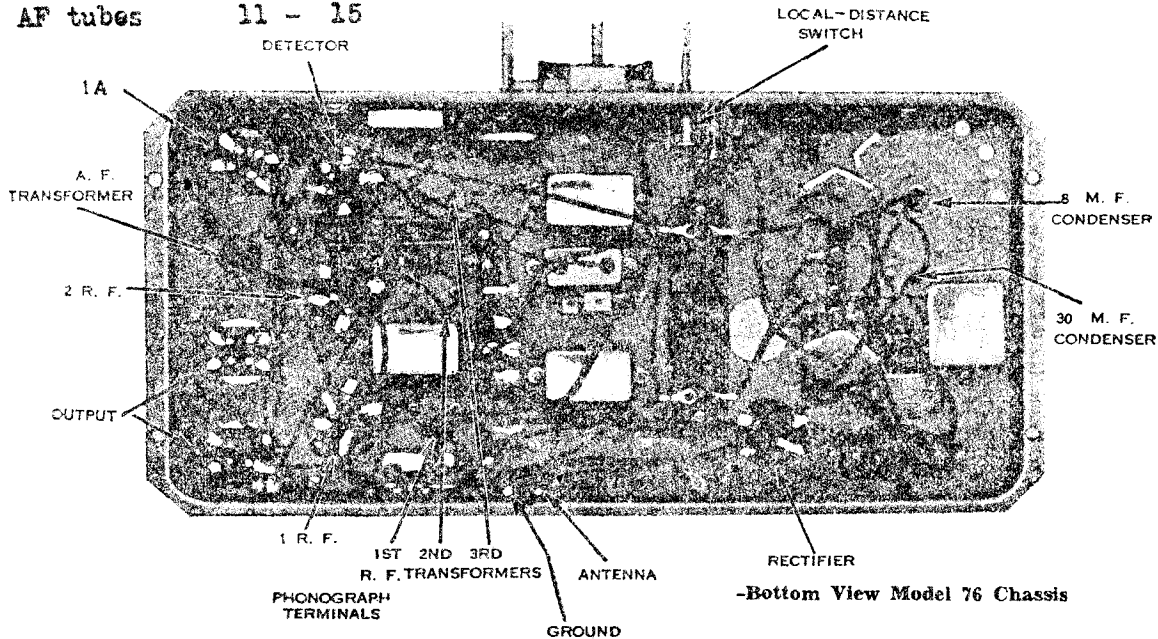
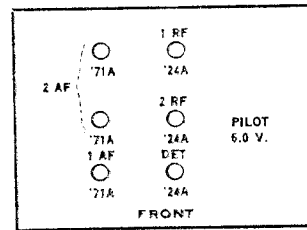
Circuit Diagram Model 76

Model 76A

fil. Vol.

RF and Det	2.3- 2.6	Screen Grid	
AF tubes	4.6- 5.2	RF tubes	60 - 80
Plate Vol.		Det	9 - 11
RF tubes	90 - 110		
Det	60 - 70		
AF tubes	80 - 100		
Control Grid			
RF tubes	2 - 3.0		
Det	3 - 3.5		
AF tubes	11 - 15		

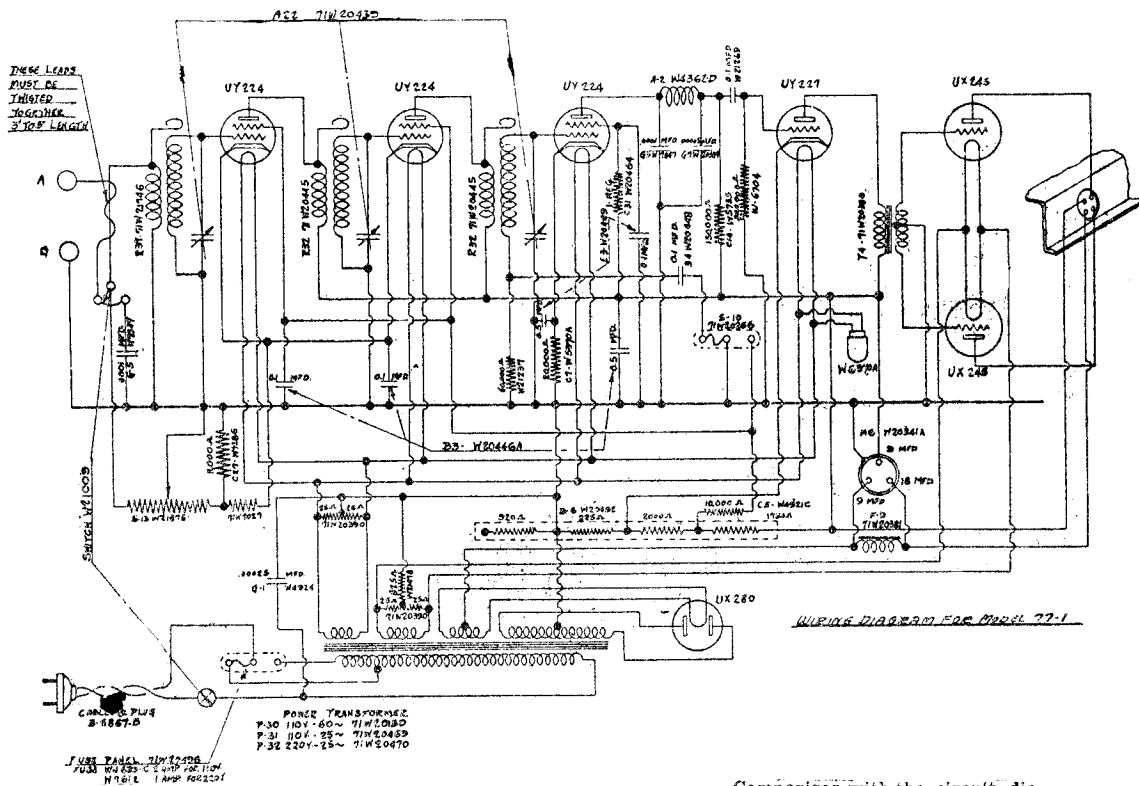
To be measured with speaker in circuit. Fuse in "high" for 117.5 line voltage and in "low" position for 107.5 line voltage.



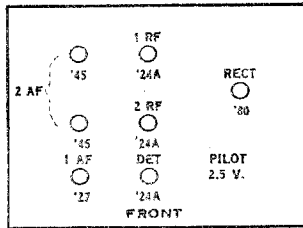
-Bottom View Model 76 Chassis

MODEL 77-1
Schematic
Bottom View, Notes

CROSLLEY RADIO CORP.

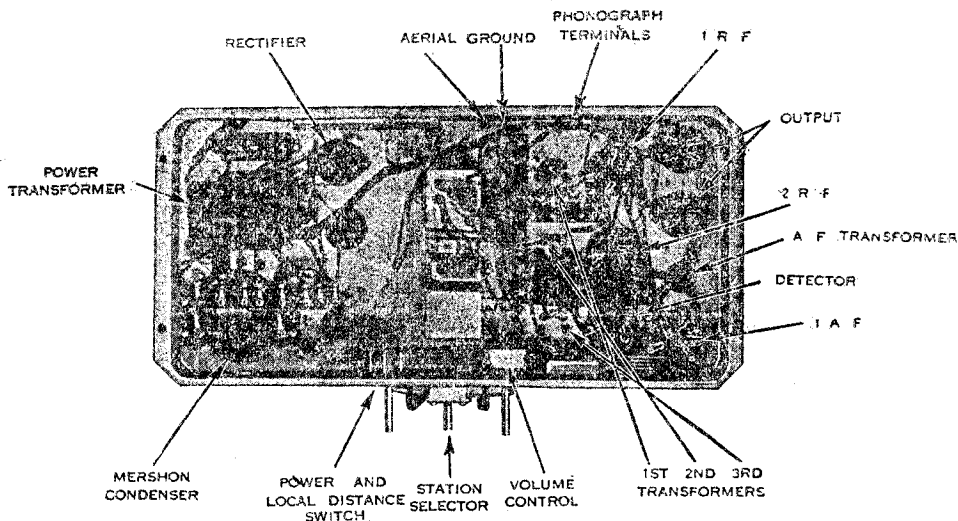


Models 77A, 77B, 77L



Comparison with the circuit diagram of Model 77.

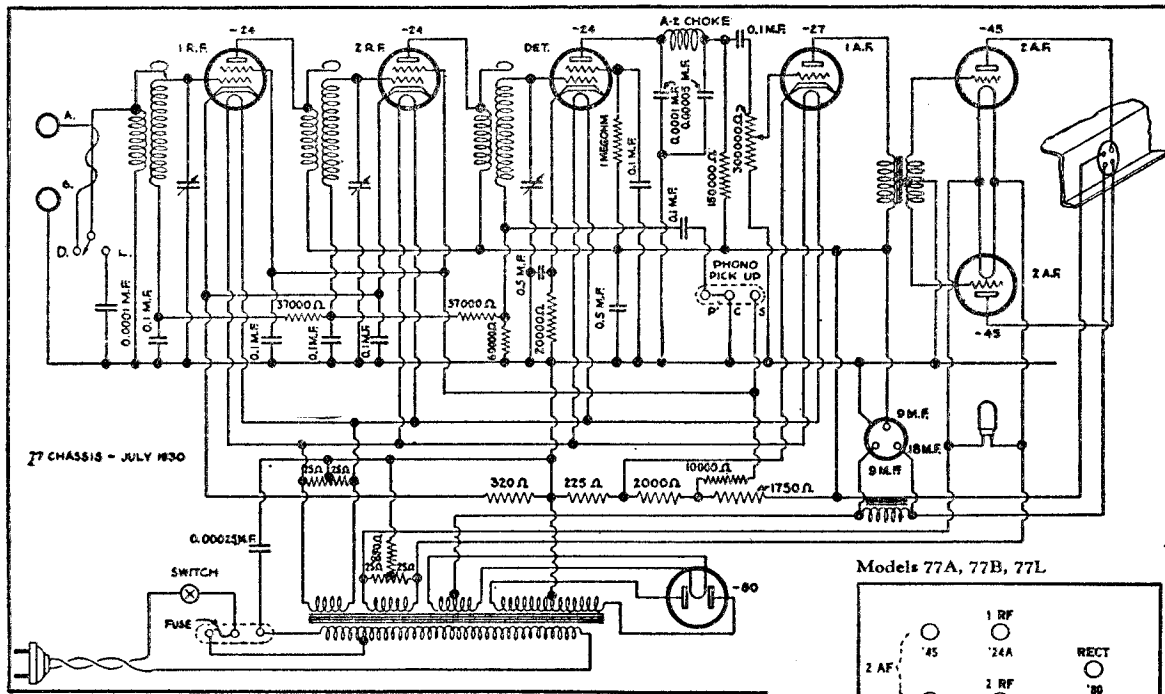
will show that the 37,000 ohm and 16,000 ohm isolating resistors, and the 0.1 micro-farad isolating condensers have been removed from the radio-frequency circuit. In addition a new type of volume control is used, located in the first stage r. f. instead of in the audio frequency circuit. The antenna coil has a low-impedance primary, and is not interchangeable with that on Model 77. These are the essential differences.



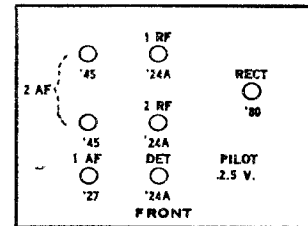
-Bottom View Model 77-1

CROSLY RADIO CORP.

MODELS 77A, 77B, 77L
Schematic, Voltage



Models 77A, 77B, 77L



Voltage Limits

Filament Voltages	
All tubes but rectifier	2.3 to 2.6
Rectifier tube	4.6 to 5.2
Plate Voltages	
R. F. tubes	140 to 160
Detector tube	85 to 110
1st Audio tubes	125 to 150
Output tubes	230 to 260
Rectifier tube (A. C. Voltage)	250 to 280 each plate
Control Grid Voltages	
R. F. tubes	1.6 to 3.2
Detector tube	2.0 to 3.2
1st Audio tube	8.0 to 10.0
Output tubes	45. to 65.
Screen Grid Voltages	
R. F. tubes	75 to 90
Detector tube	35 to 55

To be measured with speaker connected and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance, D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltage of the first audio tube, which should be measured from the emitter to the chassis. The filaments of the output and rectifier tubes serve as the emitters, while the other tubes have heaters and separate emitters. Measure filament voltages with a low-range, A. C. voltmeter.

All voltage readings are to be taken with the speaker connected and the tubes in place.

Installation Notes

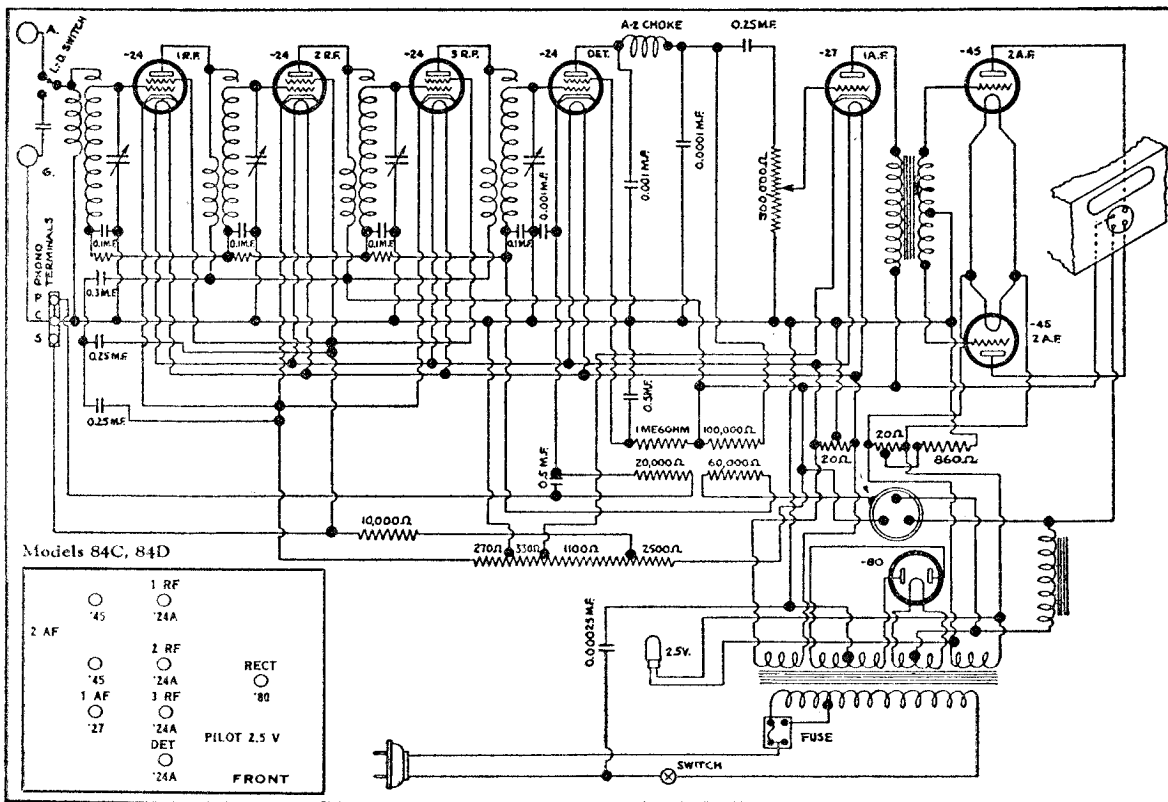
Recommended aerial length: 50 feet or more for outdoor aerial, 20 to 50 feet for indoor aerial.

There are three terminals at the rear of the chassis, marked "P", "C", and "S", for phonograph pick up devices. Instructions for connecting these in Crosley phono-radio combinations will be found in the instruction books accompanying the receivers. To connect other types of phonograph pick up, a single-pole double-throw switch is required. Cut the wire between terminals "P" and "C". Connect the center pole of the switch to terminal "C". Connect the end poles of the switch to terminals "P" and "S". Connect the two leads from the phonograph pick up to the switch poles which are connected to "P" and "C" (terminal "C" is grounded to the chassis). For phonograph reproduction, throw the switch so that the terminals "C" and "S" are connected together. For radio reproduction, throw the switch so that the terminals "P" and "C" are connected together. The volume of phonograph reproduction may be controlled by the volume control on the radio receiver.

If the phonograph attachment is disconnected from the receiver at any time and it is desired to obtain radio reception, it will be necessary to connect a wire from "P" to "C."

MODELS 84C, 84D
Schematic, Voltage
Notes

CROSLLEY RADIO CORP.



INSTALLATION NOTES

Recommended aerial length, 50 feet or more for outdoor installations; 20 feet or more for indoor installations.

Terminals are provided for phonograph pick-up devices. When such a device is connected, the wire between terminals "P" and "C" must be out. If the pick-up device is afterwards disconnected, a wire must be connected between "P" and "C" before the receiver may be operated.

To connect a phonograph pick-up a double throw, single-pole switch must be used. Connect the middle pole of the switch to terminal "C" and the end poles to terminals "P" and "S". Connect the pick-up to the switch poles which are connected to "P" and "C", and cut the wire between "P" and "C", as described above. Throw switch toward "P" pole for radio reproduction or toward "S" pole for phonograph reproduction.

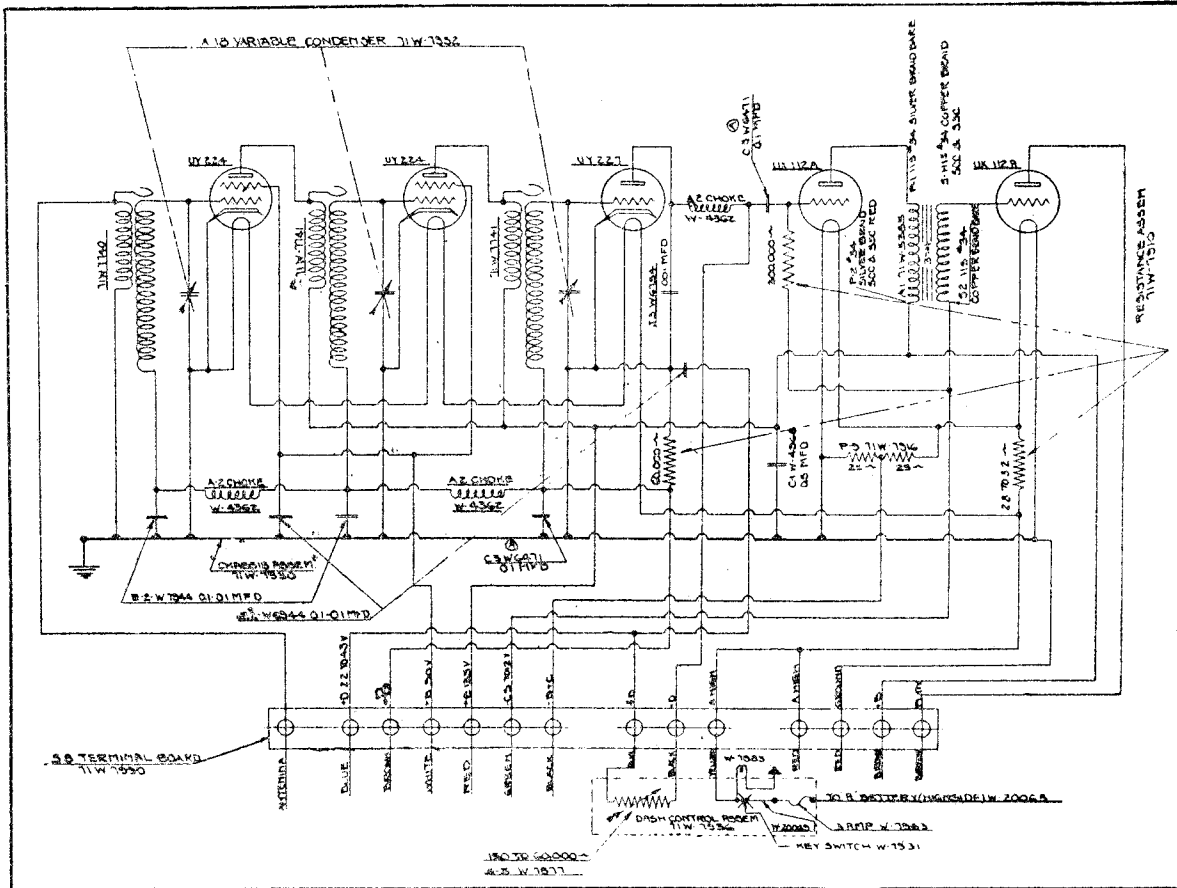
Voltage Limits

Filament Voltages	
All tubes but rectifier	2.3 to 2.6
Rectifier tube	4.6 to 5.2
Plate Voltages	
R. F. tubes	170 to 190
Detector tube	95 to 105
1st Audio tube	130 to 150
Output tubes	220 to 250
Rectifier tube (A. C. voltage)	250 to 280 each plate
Control Grid Voltages	
R. F. tubes	2.5 to 3.5
Detector tube	4.0 to 7.0
1st Audio tube	8.0 to 11.0
Output tubes	40.0 to 50.0
Screen Grid Voltages	
R. F. tubes	60 to 75
Detector tube	35 to 55

To be measured with speaker connected and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance, D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltage of the first audio tube, which should be measured from the emitter to the chassis.

CROSLY RADIO CORP.

MODEL 90 AUTO
Schematic, Voltage



Filament Voltages

R. F. and Detector Tubes.....	2.0
A. F. Tubes.....	4.7

Plate Voltages

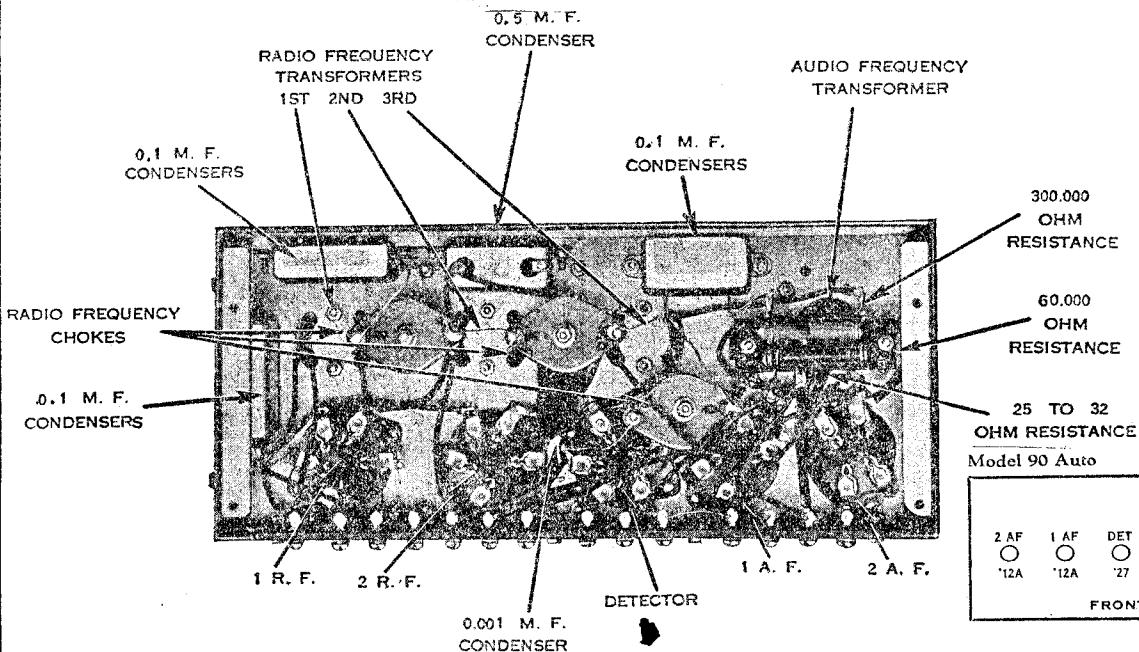
All Tubes but Detector.....	135
Detector Tube.....	22½

Control Grid Voltages

R. F. Tubes.....	2.5
Detector Tube.....	3.0
A. F. Tubes.....	12.0

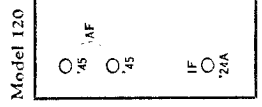
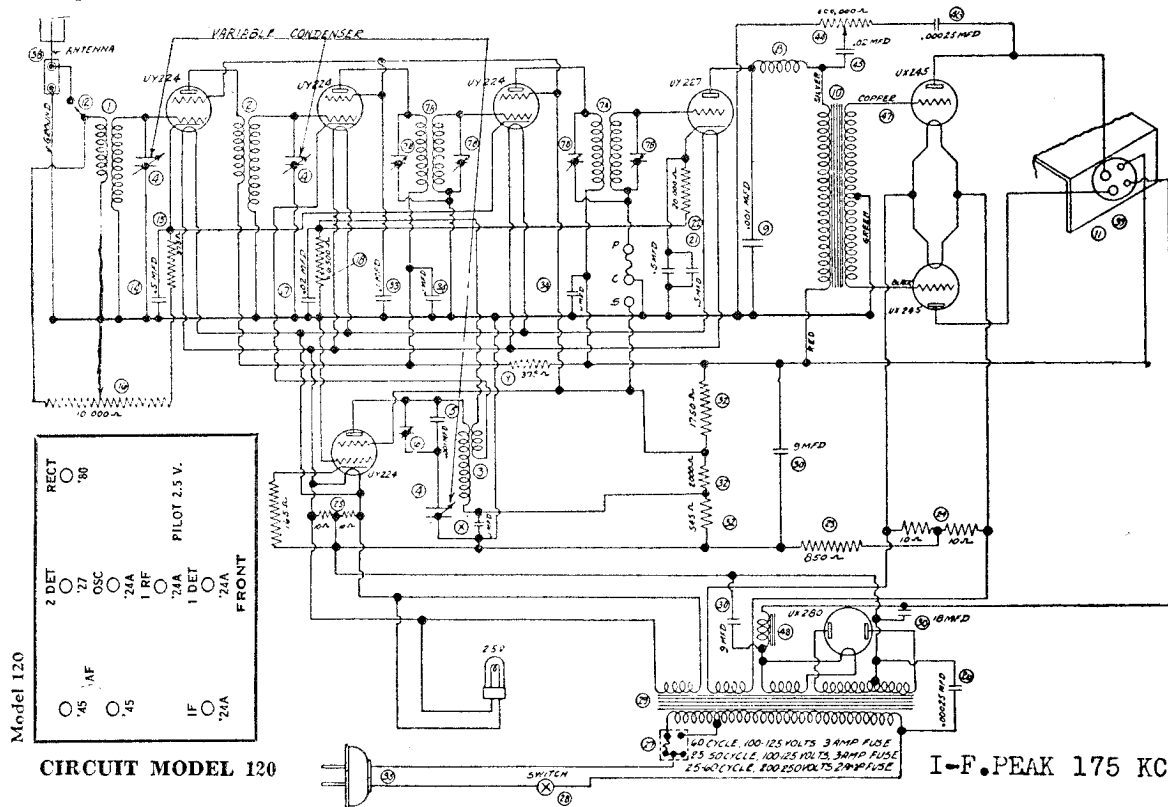
Screen Grid Voltages

R. F. Tubes.....	90
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MODEL 120
Schematic
Voltage, Notes

CROSLLEY RADIO CORP.



CIRCUIT MODEL 120

Voltage Limits

Filament Voltages

All tubes but output and rectifier ..	2.4 to 2.6
Output tubes	2.3 to 2.5
Rectifier tube	4.6 to 5.2

Plate Voltages

1st R. F. and Intermediate Amplifiers	150 to 170
Oscillator	16 to 25
1st Detector	145 to 165
2nd Detector	135 to 155
Output	245 to 275
Rectifier (A. C. voltage)	260 to 290 each plate

Screen Grid Voltages

All screen grid tubes	85 to 95
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Control Grid Voltages

1st R. F. and Intermediate Amplifiers ..	2.5 to 3.5
Oscillator	0.5 to 1.5
1st Detector	6.0 to 8.0
2nd Detector	13.0 to 17.0
Output tubes	50 to 58.0

To be measured with speaker connected, volume control on full, and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position, or of 107½ (215 for 220 volt receivers) with fuse in "Low" position.

To Compensate For Long Aerial
With 120 Chassis

Model 120 is so sensitive that a long aerial may give undesirably great pick-up. To reduce the pick-up, connect a 0.0025 mfd. condenser from the antenna terminal to the ground terminal of the receiver, and a 0.00005 mfd. condenser in the antenna lead.

Changes In 120 Chassis

Service Bulletin No. A1 of March 15th covers the A. B. J. A. series of the 120 Chassis. Sets having serial prefix letters A. B. J. B. contain the following changes. Prices of parts remain the same.

W-22017 I. F. Transformer Assembly is replaced by W-22017-E I. F. Transformer Assembly.

W-21989 Coil Assembly is replaced by W-21989-B Coil Assembly.

W-21295 I. F. Transformer Assembly is replaced by W-21295-B I. F. Transformer Assembly.

W-21964 Flexible Resistor (165 ohms) is omitted.

W-21965 Flexible Resistor (375 ohms) is added.

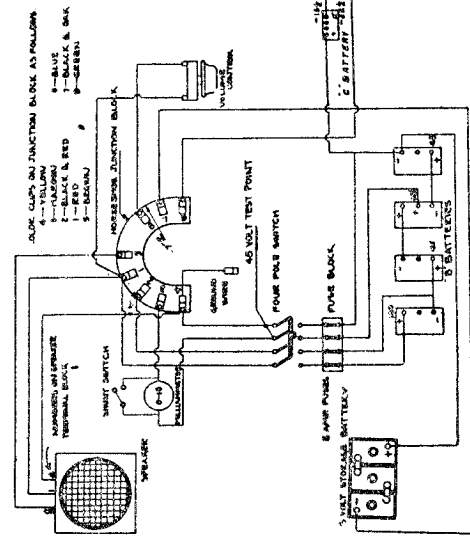
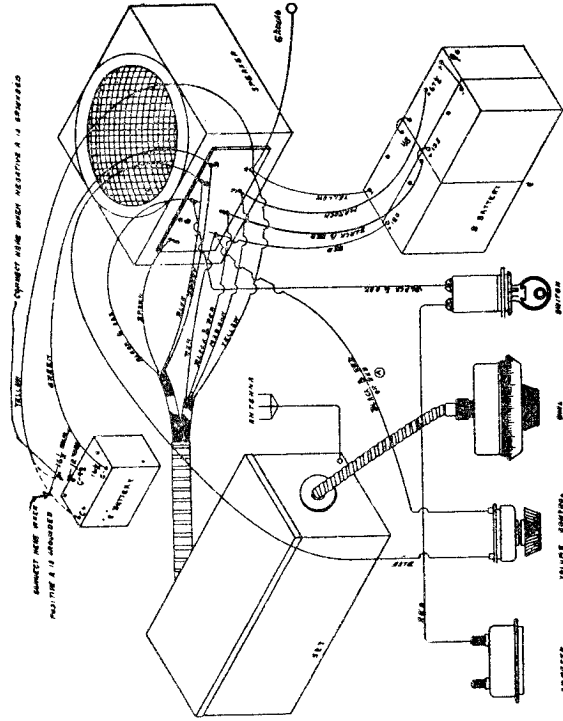
W-21995 R. F. Transformer (oscillator) (Rear) is replaced by W-22589 R. F. Transformer (oscillator).

New type I. F. Coil Assemblies are marked with a dot of red paint.

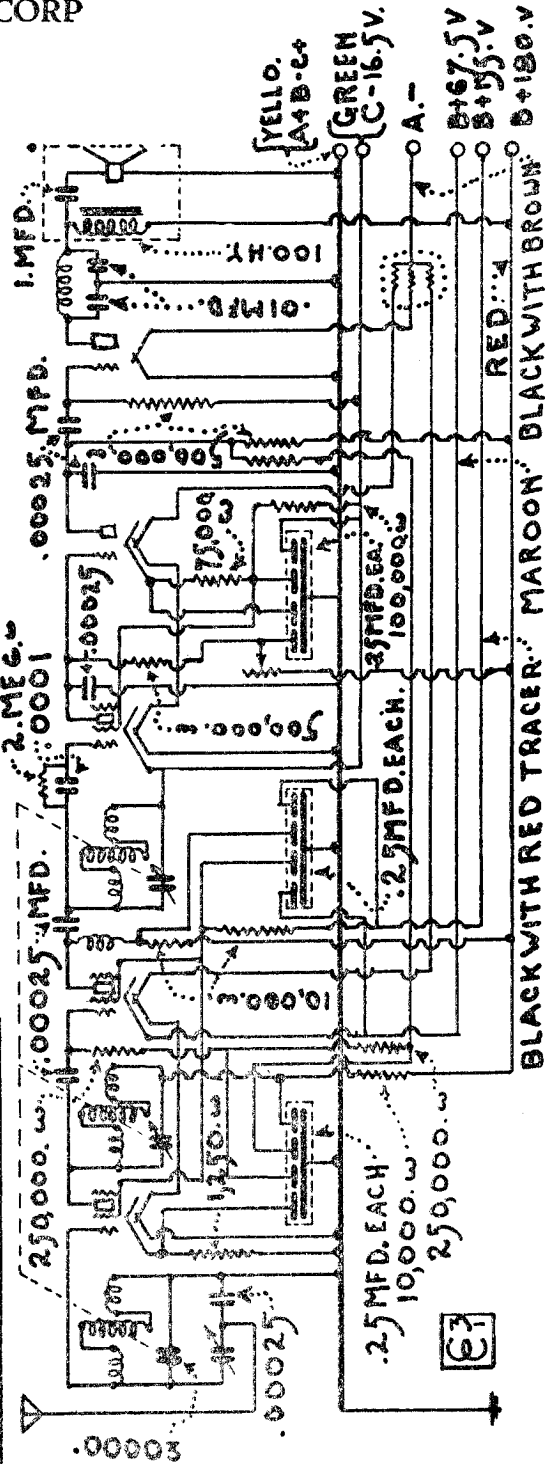
New type R. F. Transformer (oscillator), W-22589, has five connections instead of four

DELCO RADIO CORP

MODEL 3002



- 2 AF. CX-112 A
- 1 AF. C-327
- DET. C-324
- 2 RF. C-324
- 1 RF. C-324



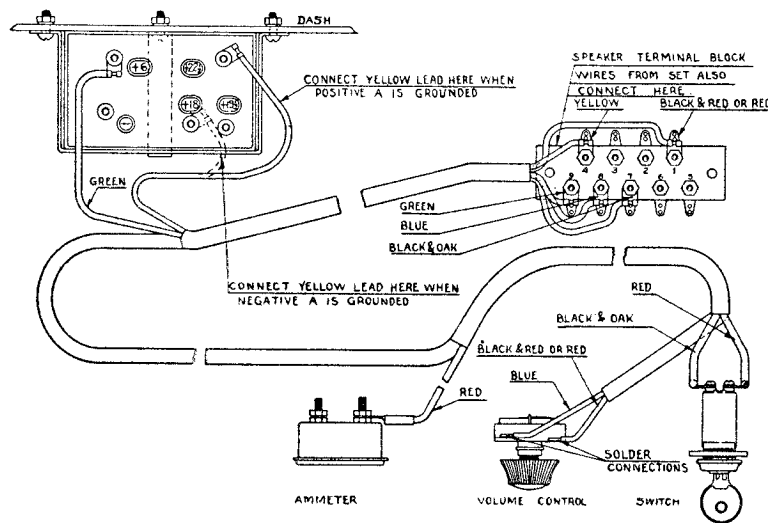
Delco Radio Model 3002

Type of Tube	Position of Tube	Tube in Test Kit.					
		Filament Volts	Plate Volts	Control Grid Volts	Screen Volts	Plate M.A. Current	Plate M.A. Grid Test
224	1-R. F.	1.9	125	4.8	100	3.2	5.4
224	2-R. F.	1.9	72	0	42	2.2	2
224	Detector	1.9	15	0	10	.13	0
227	1-A. F.	1.9	45	1	-	.19	.27
212-A	2-A. F.	3.9	137	.2	-	5.5	10.5

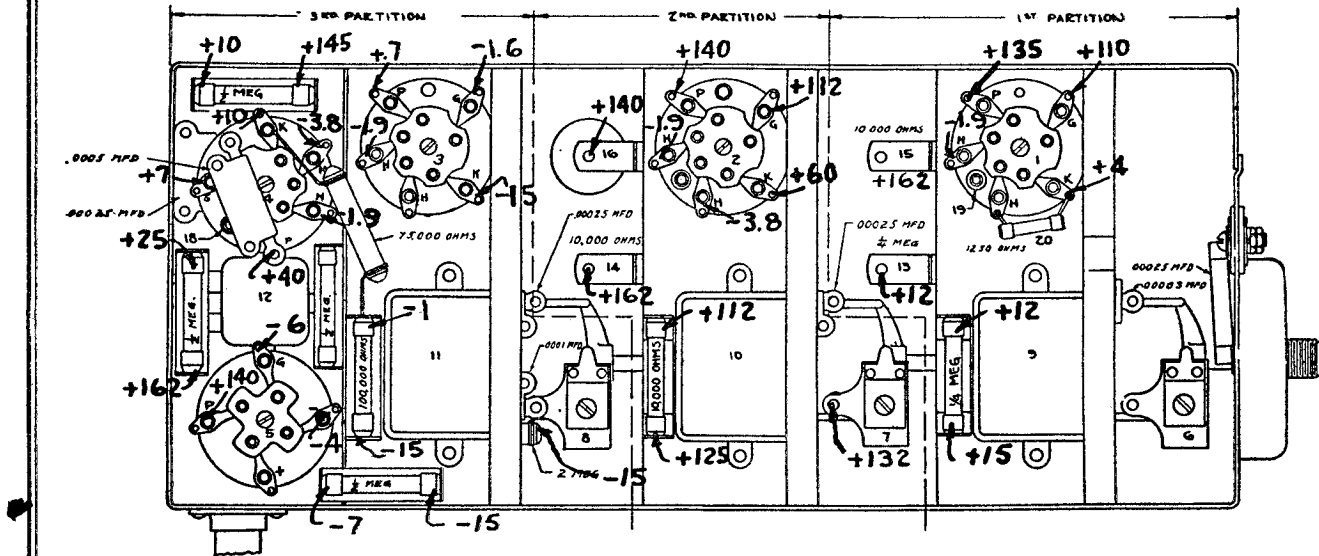
MODEL 3002
Notes
Parts Layout

DELCO RADIO CORP

After the set is in operation on a powerful signal, it will be necessary to tune the antenna circuit so that weaker signals will be received with the maximum volume. The best way to do this is to connect a milliammeter, with a zero to ten milliampere scale, in series with the B Plus 67.5 volt maroon lead. (Connect positive side of meter to set.) Insert a small screw driver in the hole in the bottom of the receiver located nearest the antenna terminal and adjust the large screw on the first balancing condenser. This is located about two inches above the hole. Adjustments should be made by turning the screw until the minimum reading on the meter is obtained. While this adjustment is being made, the station selector should be turned slightly in either way to determine whether or not the reading can be further decreased. This adjustment is a very delicate operation and requires only a slight movement in either direction, not to exceed one full turn. If a meter is not available, a weaker signal should be selected and the set adjusted to maximum volume by varying the position of the screw. Care should be taken not to apply excessive pressure in making this adjustment. While it will do no damage to ground the screw driver to the set while adjusting the screw, the signals will be cut out whenever the screw driver touches the case. A little tape wound around the screw driver will prevent this. It is impossible to receive a shock while making this adjustment. Make above adjustment only through the hole located nearest the aerial connection. After installation is complete, check all connections for correct locations and tightness.



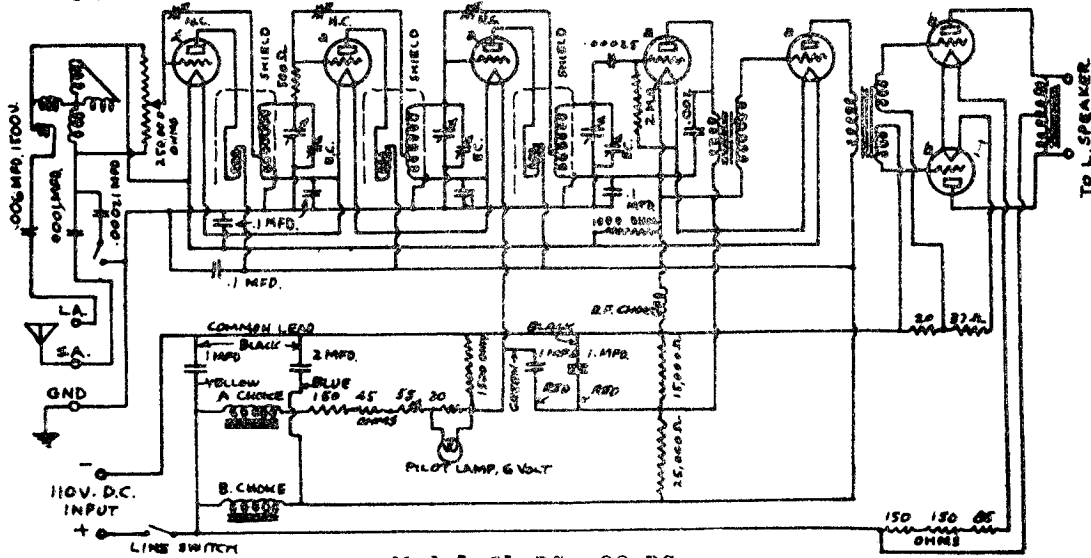
-Control Wiring Harness Connections.



EARL RADIO CORP.

MODEL 21 DC, 22 DC
MODEL 121

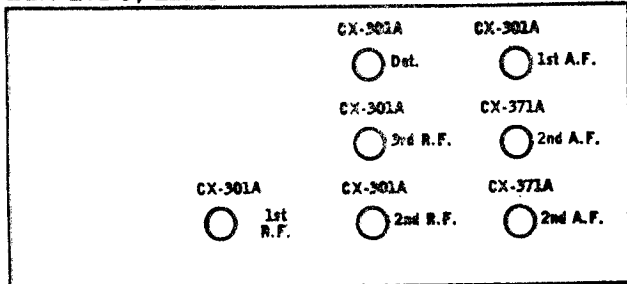
B = CX-301-A OR UX-201-A
b = CX-371-A OR UX-171-A



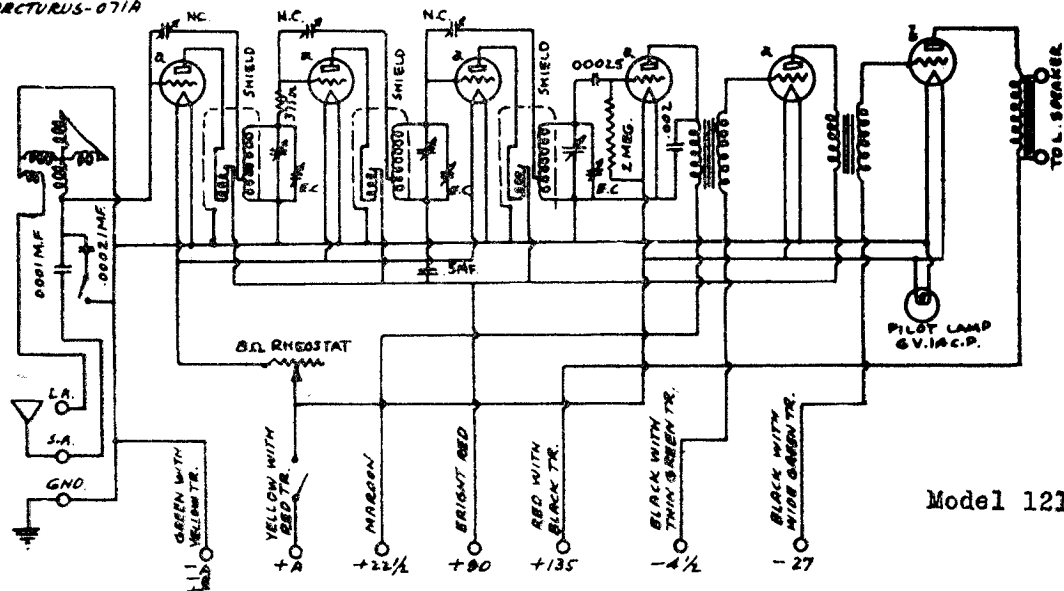
Model 21 DC, 22 DC

Earl 21DC, 22DC

(D.C.)



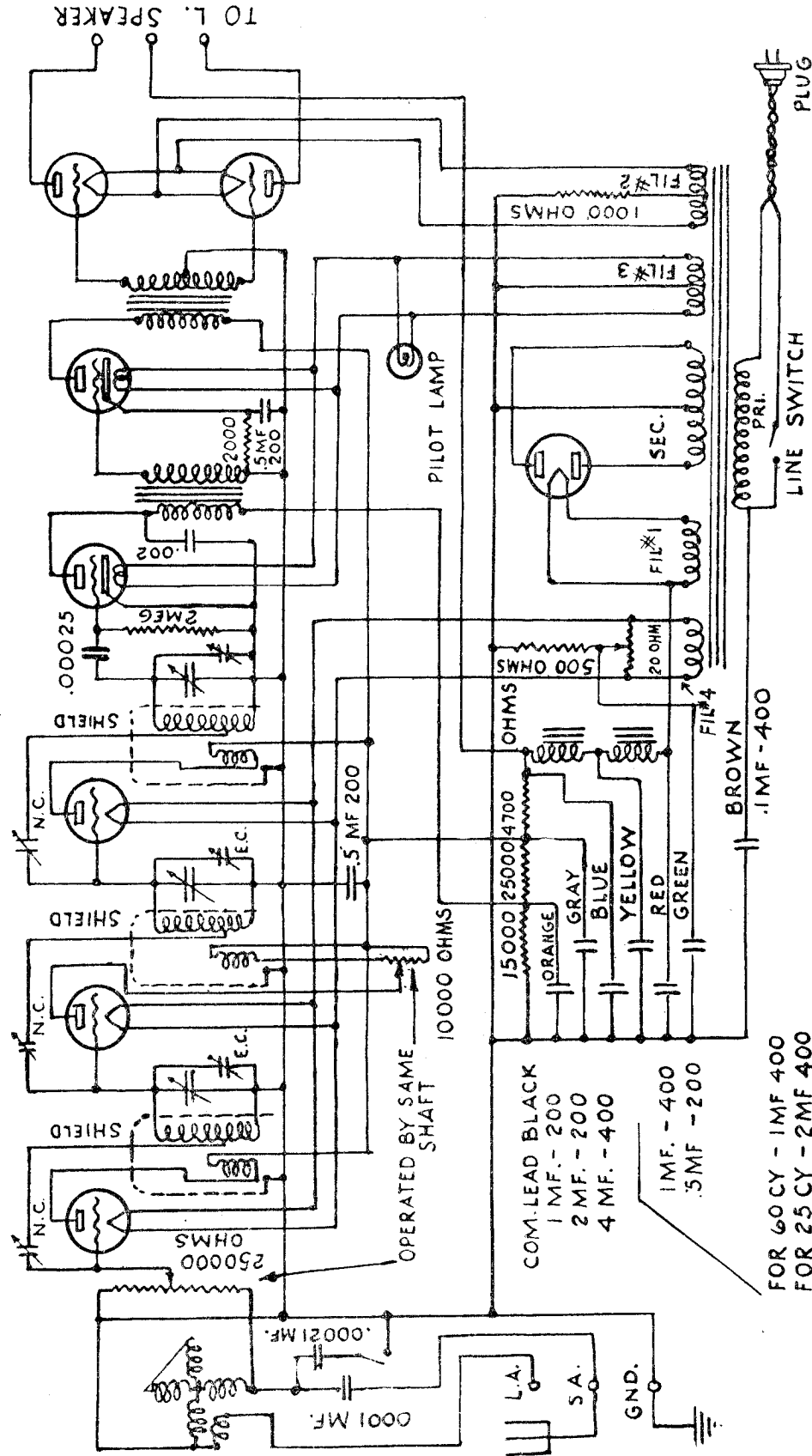
B: ARCTURUS-101A
b: ARCTURUS-071A



Model 121

MODEL 21, 22 AC
Schematic

EARL RADIO CORP.



FRESHMAN—Earl—Model 21-22
Line Voltage 116— Volume Control Position On

TYPE	PART NO.	RESISTANCE VALUE IN OHMS OR VALUE IN P.F.	RESISTANCE VALUE IN OHMS OR VALUE IN P.F.	PLATE		RESISTANCE VALUE IN OHMS OR VALUE IN P.F.	RESISTANCE VALUE IN OHMS OR VALUE IN P.F.	
				NORMAL	EXTENDED		NORMAL	EXTENDED
225	1K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	2K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	3K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	4K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	5K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	6K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	7K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	8K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	9K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	10K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	11K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	12K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	13K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	14K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	15K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	16K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	17K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	18K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	19K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	20K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	21K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	22K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	23K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	24K1 27	1.5	80	1.47	5	2.3	4.6	2.3
225	25K1 27	1.5	80	1.47	5	2.3	4.6	2.3

Earl 21, 22 (A.C.)

CX-380 Recl.

CX-326 3rd R.F.

CX-327 Det.

CX-326 1st R.F.

CX-327 1st A.F.

CX-371A 2nd A.F.

CX-371A 2nd A.F.

CX-326 2nd R.F.

CX-371A 2nd A.F.

FOR 60 CY - 1 MF 400
FOR 25 CY - 2 MF 400

COM. LEAD BLACK
1 MF. - 200
2 MF. - 200
4 MF. - 400

1 MF. - 400
.5 MF - 200

OPERATED BY SAME SHAFT

10000 OHMS

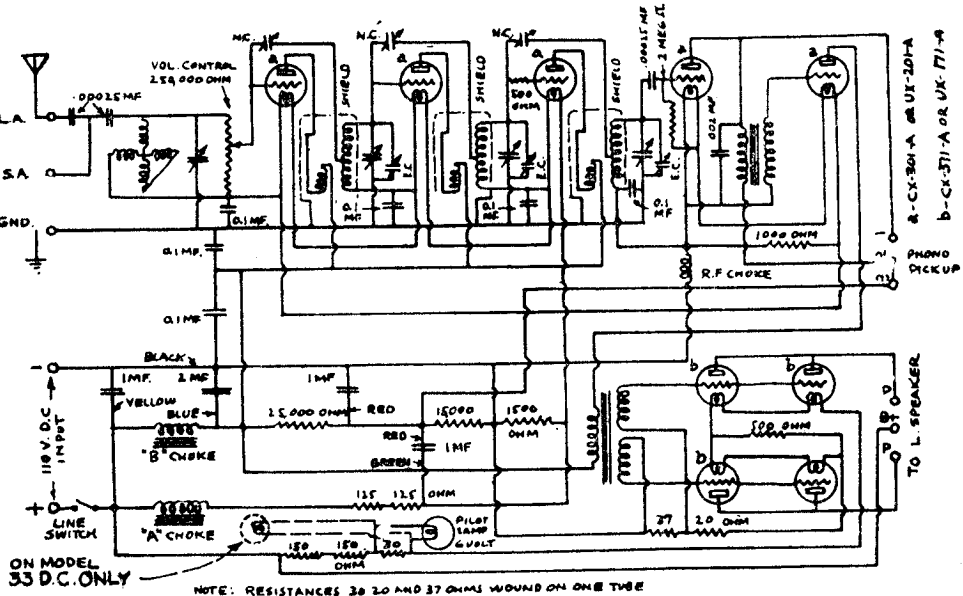
.5 MF 200

0001 MF.
.00021 MF.

L.A.
S.A.
GND.

MODEL 24 DC
 MODEL 31 DC, 32 DC
 MODEL 33-S A C
 Schematic

EARL RADIO CORP.

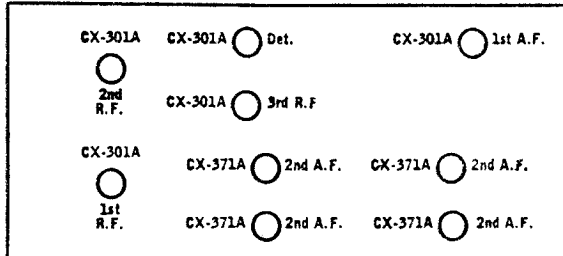


NOTE: RESISTORS 30 20 AND 37 OHMS WOUND ON ONE TUBE

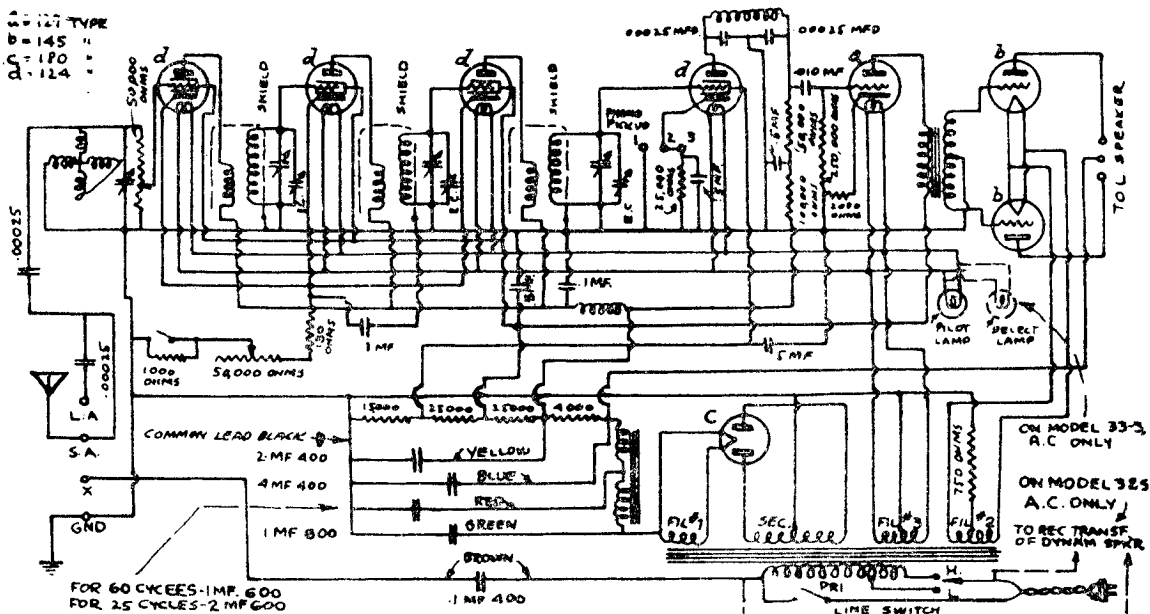
Model 24 DC, 31 DC, 32 DC

31DC, 32DC

(D.C.)



51 - 127 TYPE
 52 - 145 "
 53 - 180 "
 54 - 114 "

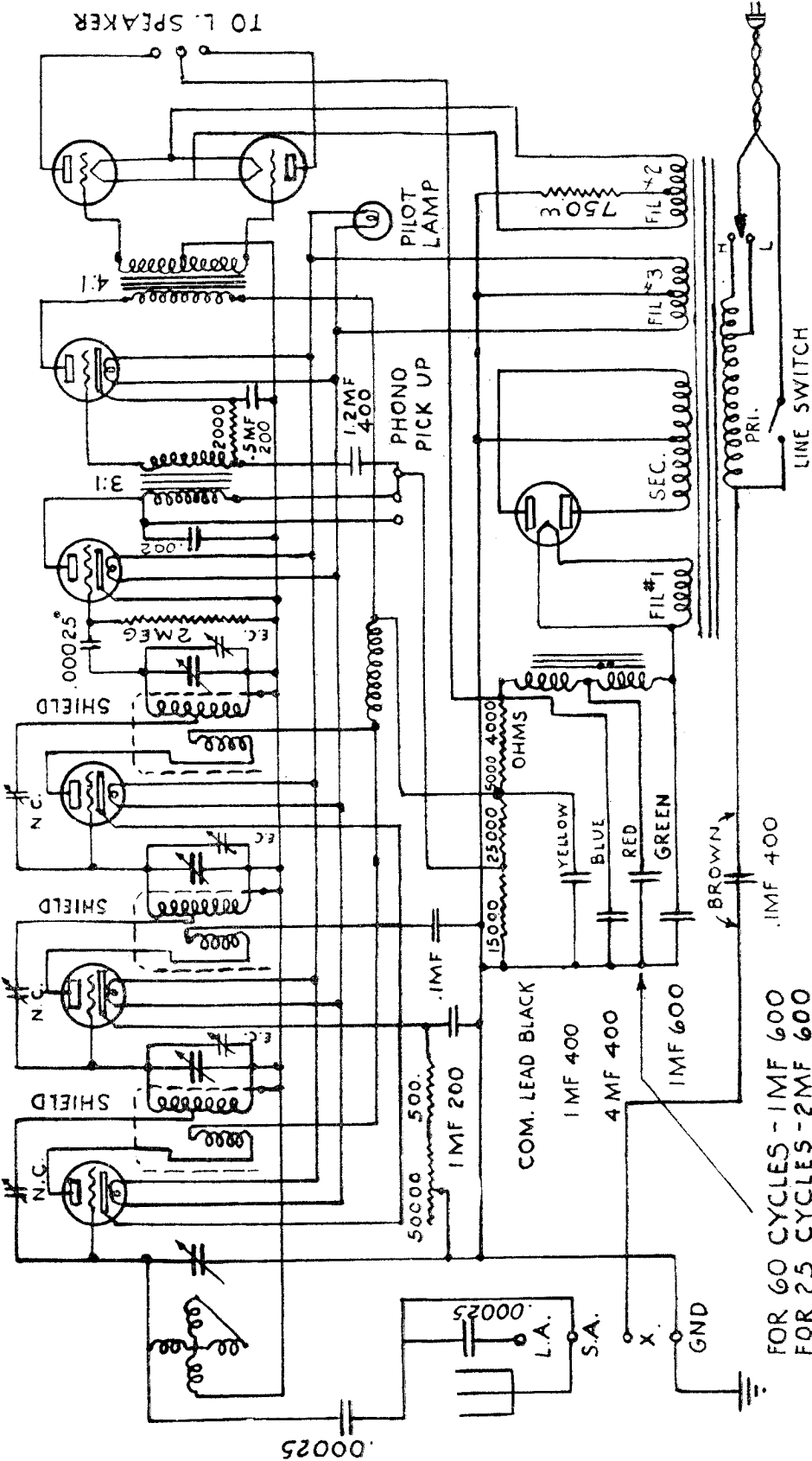


FOR 60 CYCLES - 1 MF 400
 FOR 25 CYCLES - 2 MF 600

Model 33-S A C

MODEL 31, 32 AC
Schematic

EARL RADIO CORP.



FRESHMAN—Earl—Model 31-32
Line Voltage 116—Set on High Volt Tap—Volume Control Position On

EARL MODELS 31 and 32

FOR 60 CYCLES - 1MF 600
FOR 25 CYCLES - 2MF 600
NC-NEUTRALIZING CONDENSER
EC-EQUALIZING CONDENSER
(A.C.)

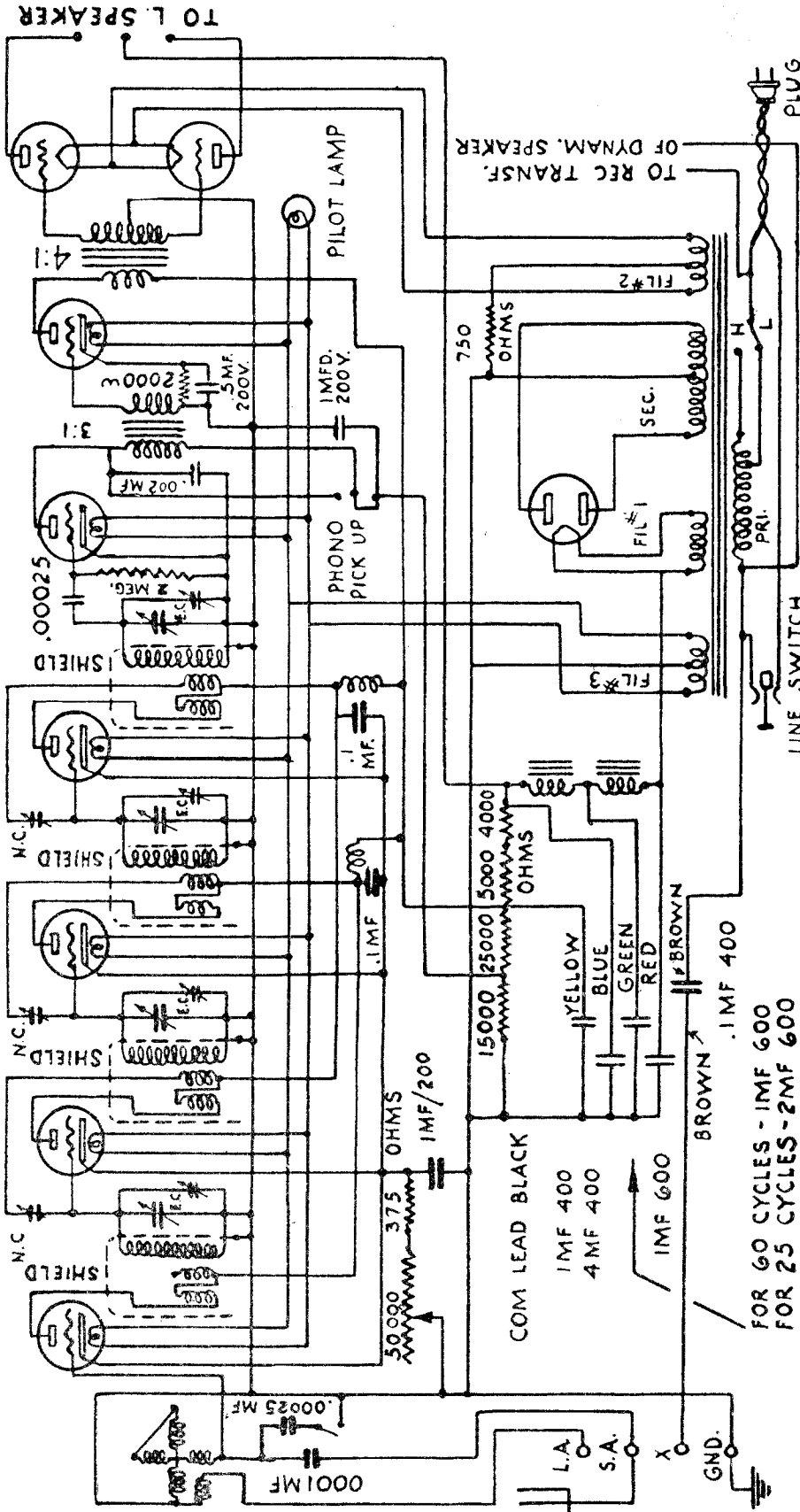
TYPE NO.	POSITION	TYPE	VALUE	TIME OUT		RESISTOR VALUE IN SOLENT OF SET		TIME IN TESTER		MAXIMUM CURRENT
				A	B	A	B	A	B	
1	227	1st R.F.	2.15	92	2.07	50	5	3.5	0.1	4.5
2	227	2nd R.F.	2.15	92	2.07	50	5	3.5	0.1	4.5
3	227	3rd R.F.	2.15	92	2.07	50	5	3.5	0.1	4.5
4	227	1st A.F.	2.15	92	2.07	50	5	3.5	0.1	4.5
5	227	2nd A.F.	2.15	92	2.07	50	5	3.5	0.1	4.5
6	245	2nd A.F.	2.45	200	2.05	61	5	2.4	0.2	2.0
7	245	1st A.F.	2.45	200	2.05	195	37	2.5	0.2	2.0
8	300	Rect.	5.4	-	4.85	-	-	25	0.2	4
9	327	1st R.F.	-	-	-	-	-	25	0.2	4
10	327	2nd R.F.	-	-	-	-	-	25	0.2	4
11	327	3rd R.F.	-	-	-	-	-	25	0.2	4
12	327	1st A.F.	-	-	-	-	-	25	0.2	4
13	327	2nd A.F.	-	-	-	-	-	25	0.2	4

- CX-380 Rect.
- C-327 Det.
- CX-345 2nd A.F.
- C-327 3rd R.F.
- CX-345 2nd A.F.
- C-327 2nd R.F.
- C-327 1st R.F.

Earl 31, 32

EARL RADIO CORP.

MODEL 41, 42 AC Schematic



FRESHMAN—Earl—Model 41
Line Voltage 116—Set on High Volt Tap—Volume Control Position On

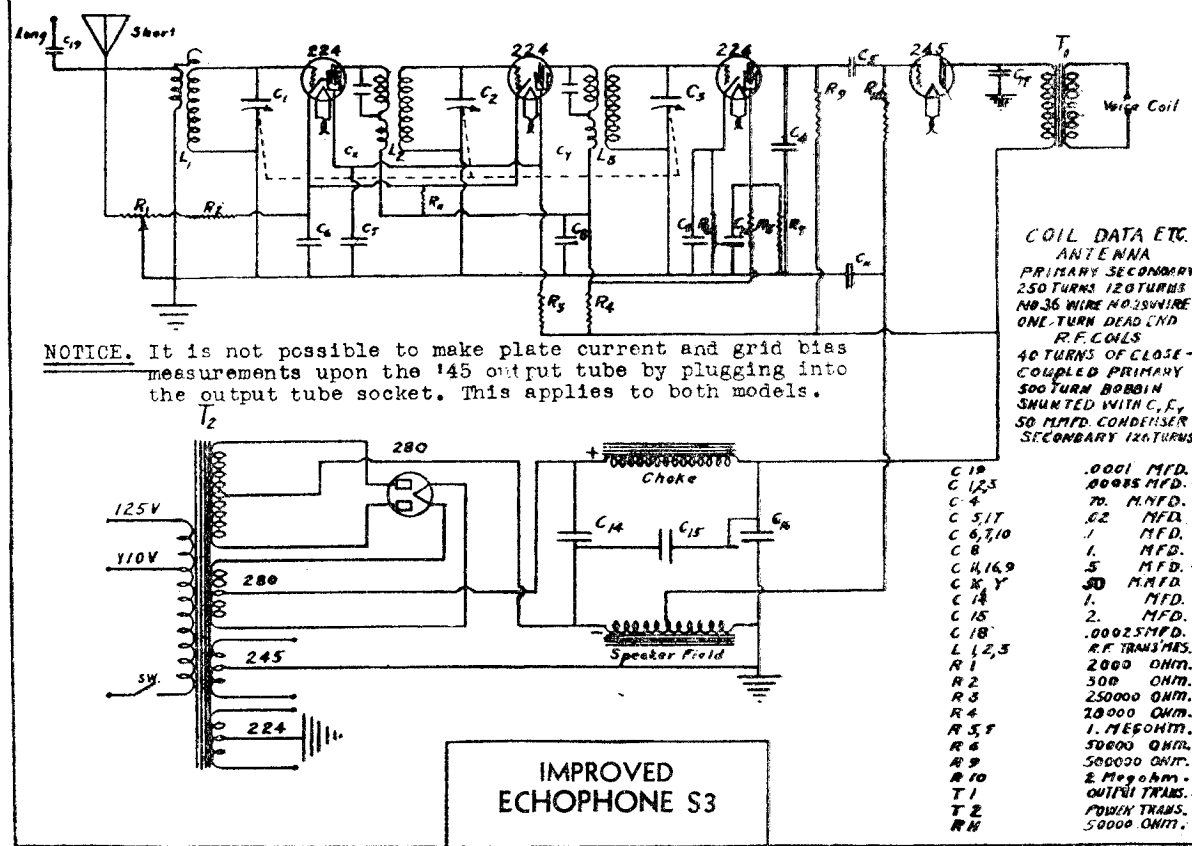
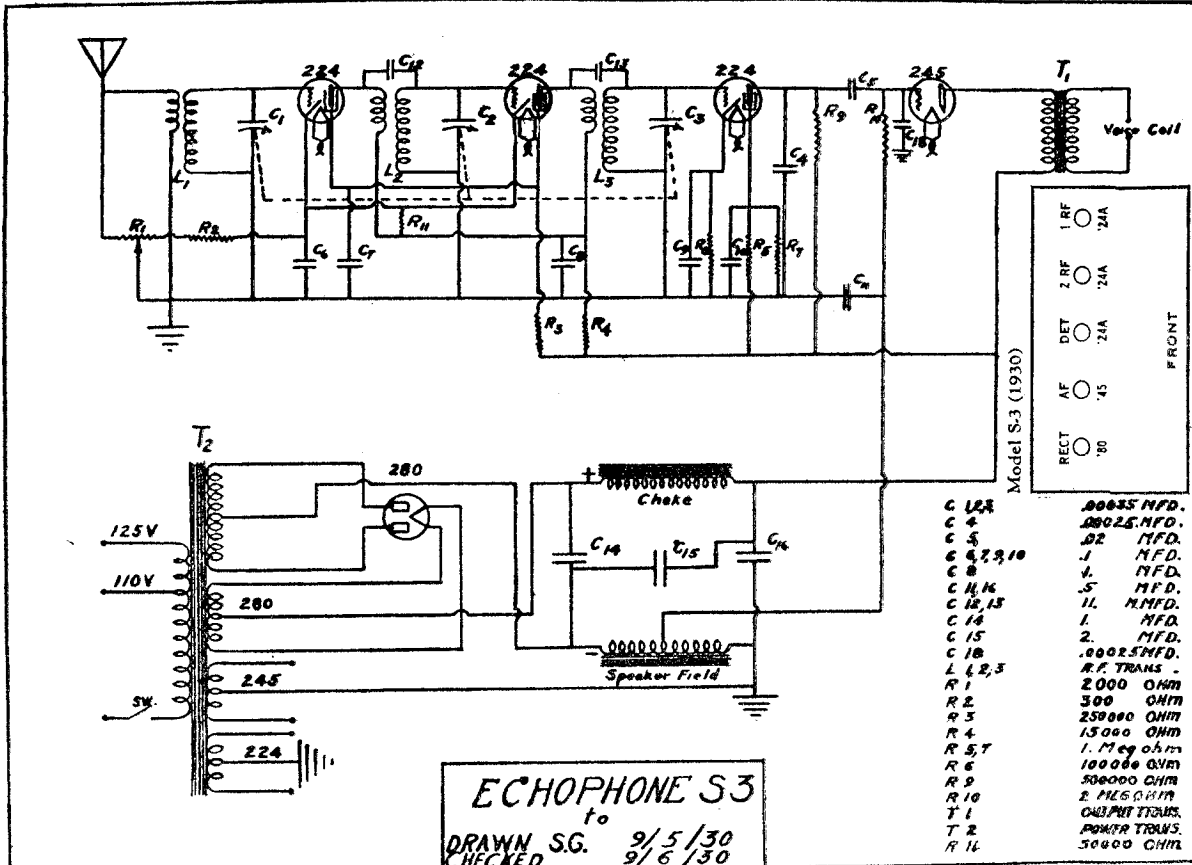
TUBE NO.	TUBE TYPE	LINE VOLT.			CURRENTS			RESISTOR PLUG IN SOCKET OF M.I.			PLUG SOCKET
		50	100	116	5	10	15	1	2	3	
6BE6	1st AF	2.40	75	2.85	72	4	5	2.8	5.5	2.7	
6BE7	2nd AF	2.40	75	2.85	72	4	5	2.8	5.5	2.7	
6BE7	3rd AF	2.40	75	2.87	72	4	5	2.8	5.5	2.7	
6BE7	4th AF	2.40	75	2.85	72	4	5	2.8	5.5	2.7	
6BE7	Det.	2.40	80	2.85	75	4	5	2.8	5.5	2.7	
6BE7	1st A.	2.40	80	2.85	75	4	5	2.8	5.5	2.7	
6BE7	2nd A.	2.40	80	2.85	75	4	5	2.8	5.5	2.7	
6AR5	Rect.	2.40	200	2.87	100	35	45	2.8	5.5	2.7	
6X4	Rect.	2.40	200	2.87	100	35	45	2.8	5.5	2.7	
6BE6	Pilot L.	2.40	—	—	—	—	—	—	—	—	

(A.C.)

CX-345	2nd A.F.	C-327	1st R.F.
CX-345	1st A.F.	C-327	4th R.F.
CX-345	2nd R.F.	C-327	2nd R.F.
CX-345	1st R.F.	C-327	1st R.F.
CX-380	Rect.		
C-327			Di.

ECHOPHONE RADIO MFG. CO.

MODEL S-3
MODEL S-3 (Rev.)
Schematic



NOTICE. It is not possible to make plate current and grid bias measurements upon the '45 output tube by plugging into the output tube socket. This applies to both models.

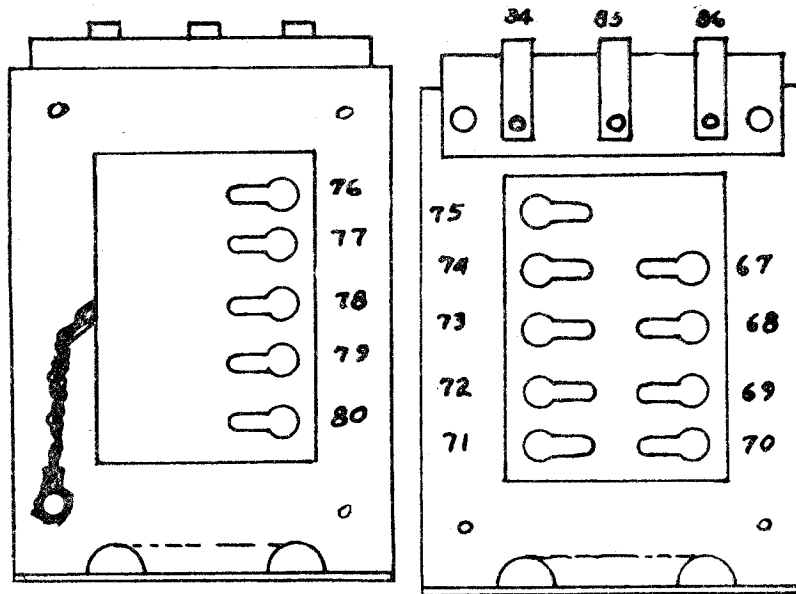
COIL DATA ETC.
ANTENNA
PRIMARY SECONDARY
250 TURNS 120 TURNS
NO. 36 WIRE NO. 28 WIRE
ONE TURN DEAD END
R.F. COILS
40 TURNS OF CLOSE-
COUPLED PRIMARY
500 TURN BOBBIN
SHUNTED WITH C, F,
50 M.M.F.D. CONDENSER
SECONDARY 120 TURNS

MODEL S-3
Voltage
Notes

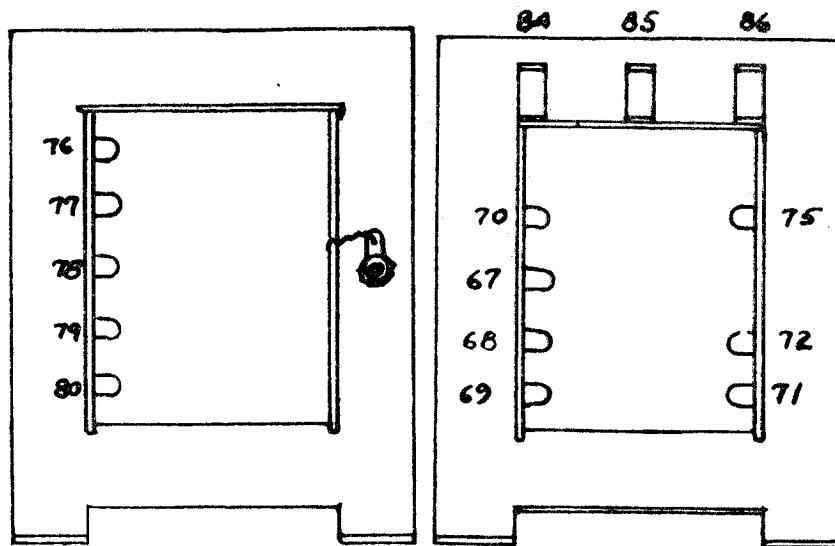
ECHOPHONE RADIO MFG. CO.

Model S-3

1. Plate of 245 Tube
#5 to ground
Normal 250 volts
Low 235 volts
High 275 volts
2. R. F. Plate
#25 to ground
Normal 140 volts
Low 120 volts
High 160 volts
3. R. F. Screen
#14 to ground
Normal 60 volts
Low 50 volts
High 75 volts
4. Detector Plate
#13 to ground
Normal 80 volts
Low 70 volts
High 90 volts
5. Detector Screen
#9 to ground
Normal 25 volts
Low 20 volts
High 30 volts
6. Detector Cathode
#10 to ground
..... 5 to 10 volts
7. R. F. Cathode
#15 to ground
..... 1.5 to 2.5 volts
8. 245 Bias
#48 to ground
Normal 50 volts
Low 40 volts
High 55 volts



TYPE HA

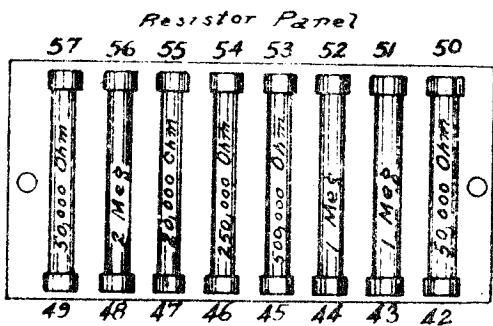


TYPE JE

Drawing showing corresponding terminal positions on two types of power transformers used on S-3.

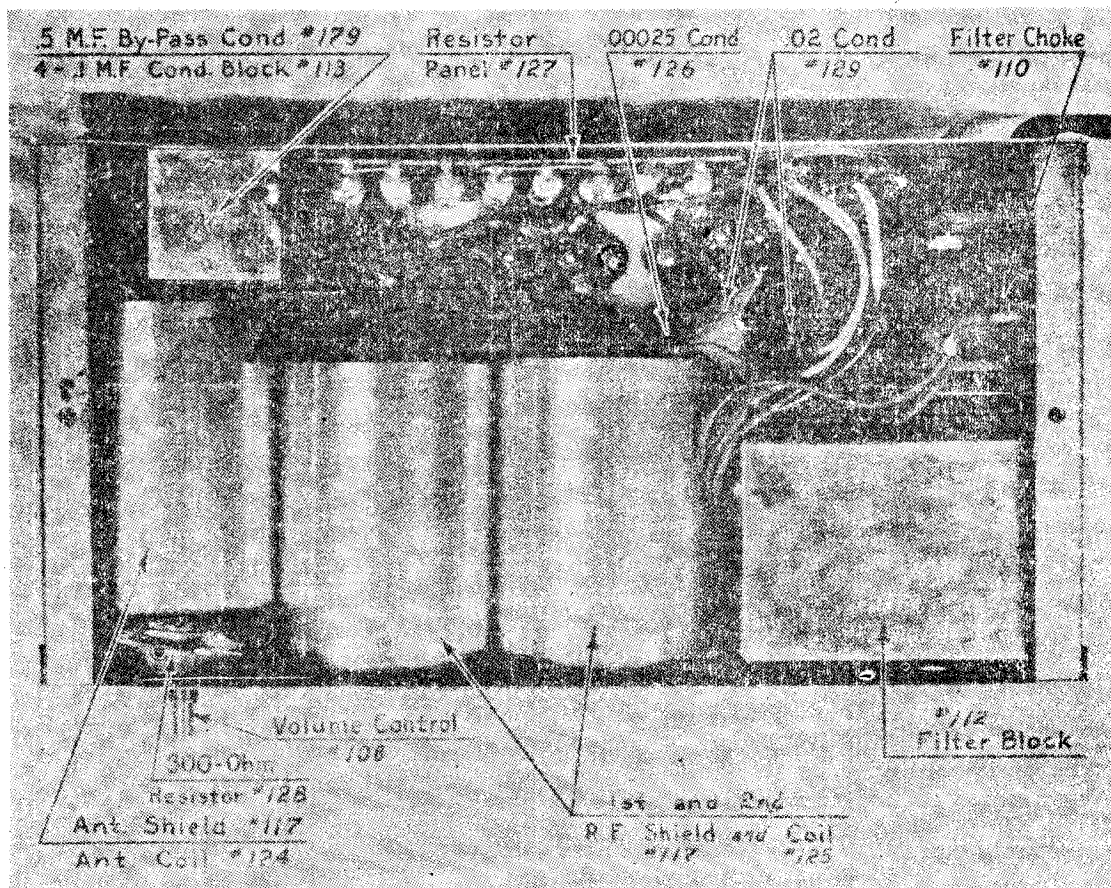
Power Transformer

- 75-73 Pri. winding 74 low voltage tap.
- 72-71 Fil. winding 280 tube 70 center tap.
- 69-67 High voltage Sec. 68 center tap.
- 76-80 Fil. winding for 224 tubes.
- 77-79 Fil. winding for 245 tube 78 center tap.

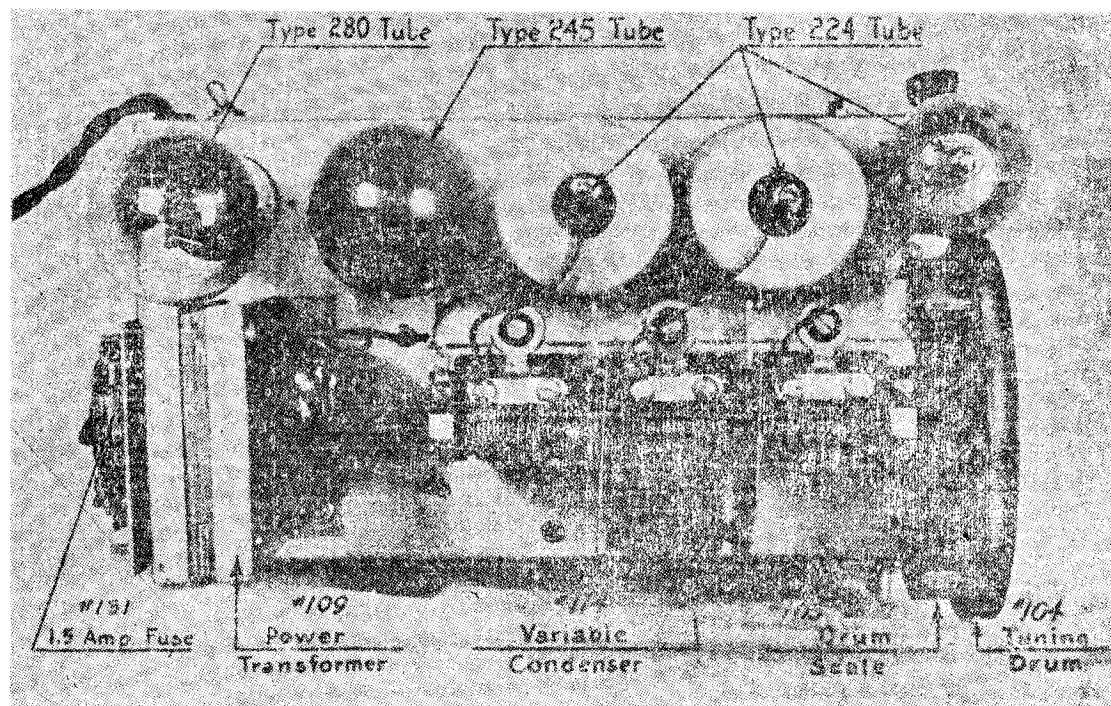


ECHOPHONE RADIO MFG. CO.

MODEL S-3
Chassis



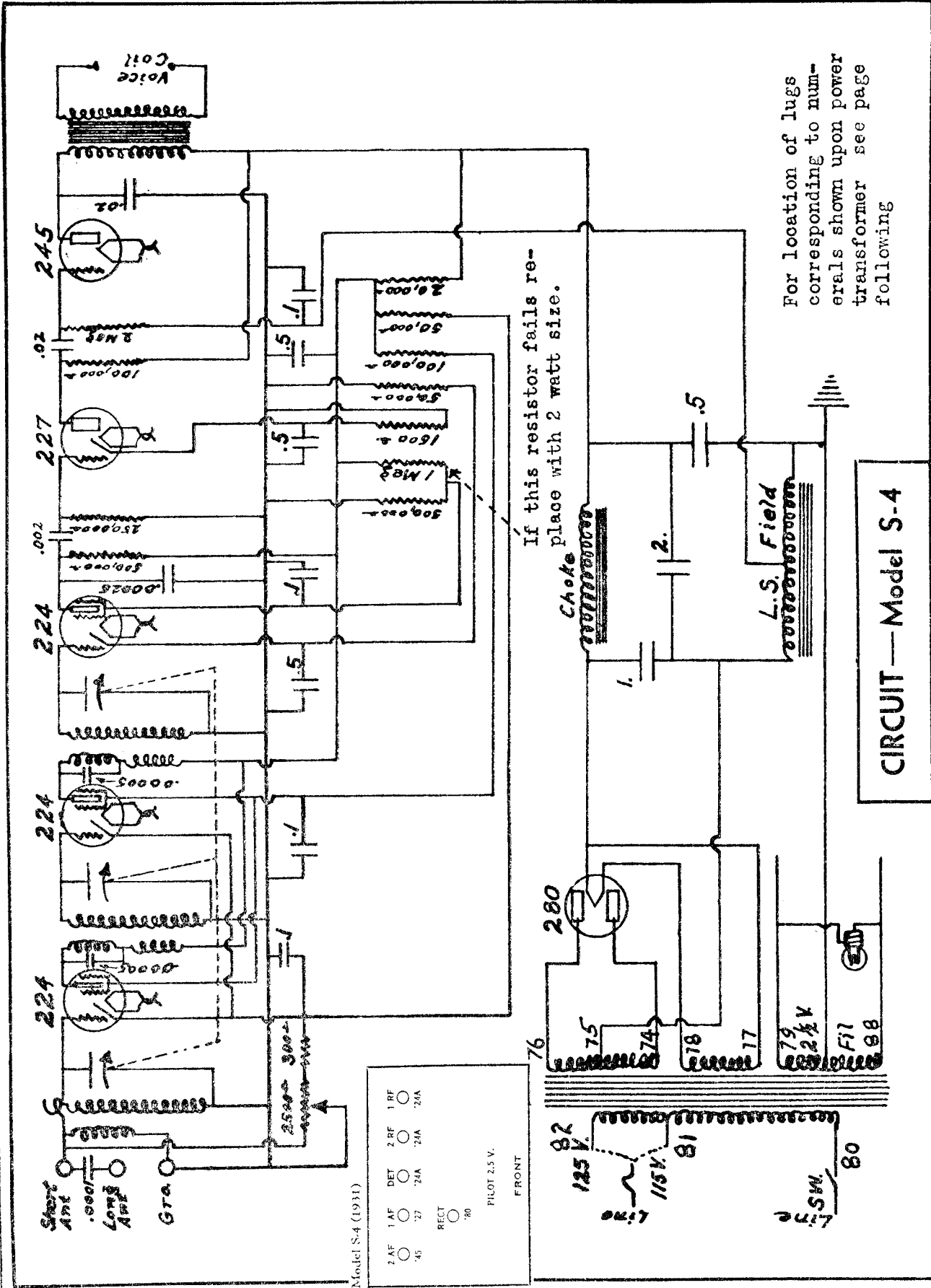
ECHOPHONE—Model S-3



ECHOPHONE—Model S-3

MODEL S-4
Schematic

ECHOPHONE RADIO MFG. CO.



For location of lugs corresponding to numerals shown upon power transformer see page following

If this resistor fails replace with 2 watt size.

Model S-4 (1931)

2AF	1AF	DET	2RF	1RF
75	77	24A	24A	24A
RECT	70			

PILOT 2.5 V.
FRONT

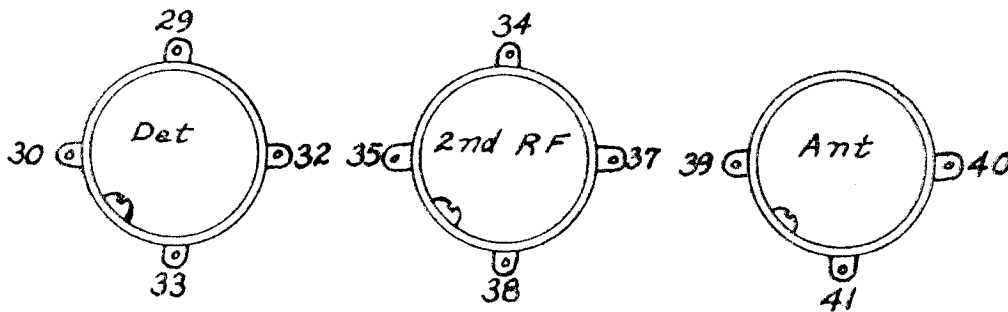
CIRCUIT—Model S-4

ECHOPHONE RADIO MFG. CO.

MODEL S-4
Voltage
Data

The Antenna coil has a bobbin primary and also a single close-coupled incomplete turn around grid end of secondary coil. The R. F. coils have a bobbin primary and also a close-coupled primary. A .00005 condenser is connected across the bobbin primary.

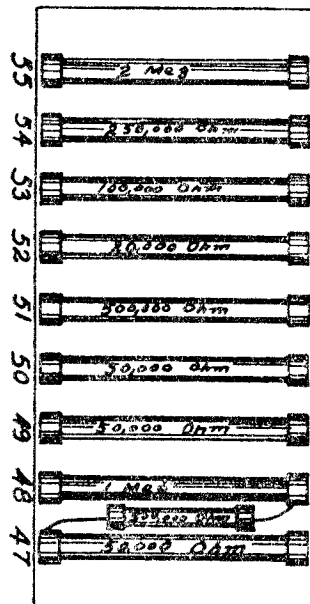
In some of the later S-4 models bank-wound "Litz" wire coils are used. These R. F. coils have a small honey-comb primary coil mounted in the ground end of the secondary coil and a capacitor across the plate and grid terminals of the coil. The "Litz" antenna coil has a tight-coupled primary wound over the ground end of the secondary coil.



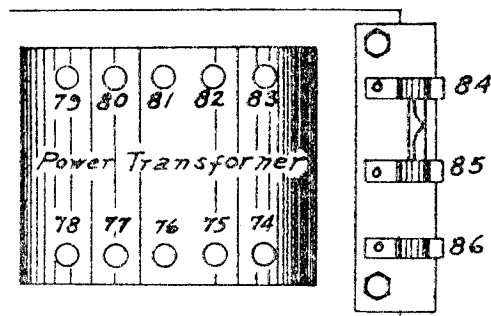
Continuity Chart For
Litz Wire Bank Wound Coils
Echophone
Model - S4

- 1. Plate of 245 Tube.
#5 to ground
Normal—225 volts
Low— 200 volts
High— 250 volts
- 2. R. F. Plate.
#25 to ground
Normal—110 volts
Low— 100 volts
High— 120 volts
- 3. R. F. Screen.
#14 to ground
Normal—50 volts
Low— 40 volts
High— 60 volts
- 4. Detector Plate.
#13 to ground
Normal—30 volts
Low— 25 volts
High— 50 volts

- 5. Detector Screen.
#9 to ground
Normal—20 volts
Low— 15 volts
High— 30 volts
- 6. Detector Cathode
#10 to ground
3 to 6 volts
- 7. R. F. Cathode.
#15 to ground
1.5 to 2.5 volts
- 8. 245 Bias.
#48 to ground
Normal—50 volts
Low— 40 volts
High— 55 volts

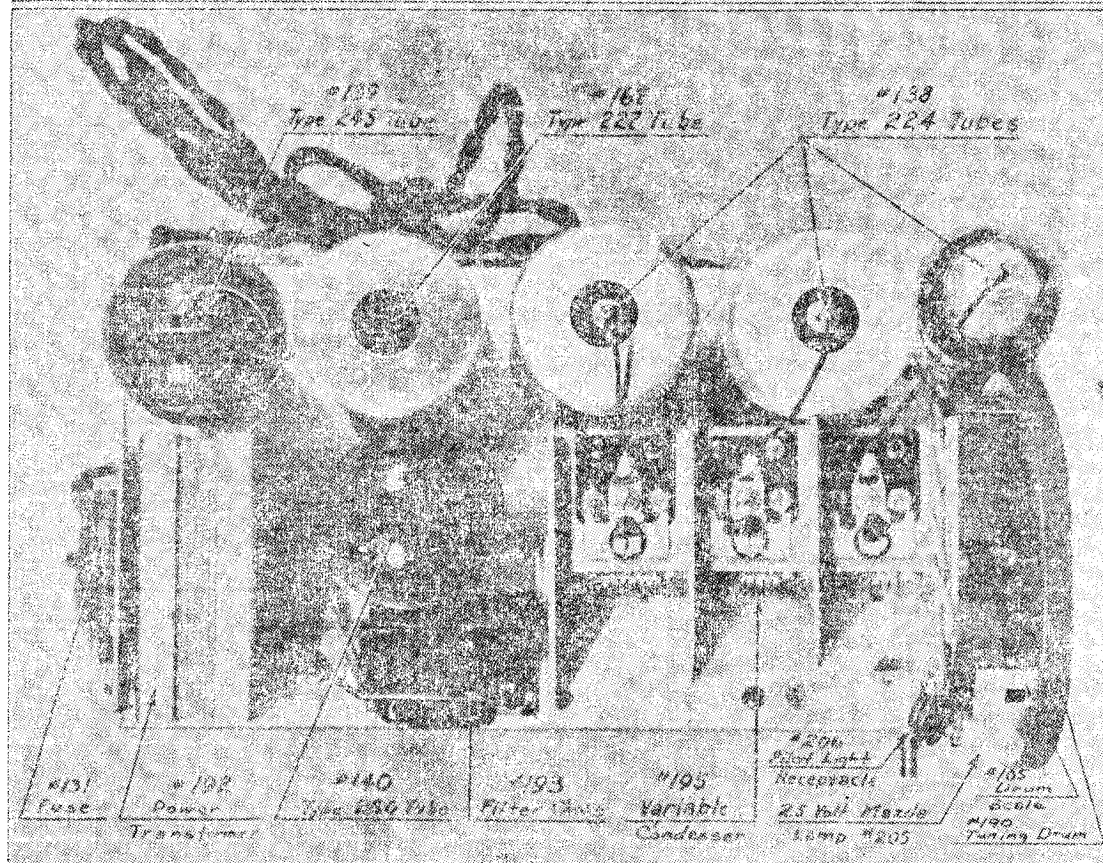
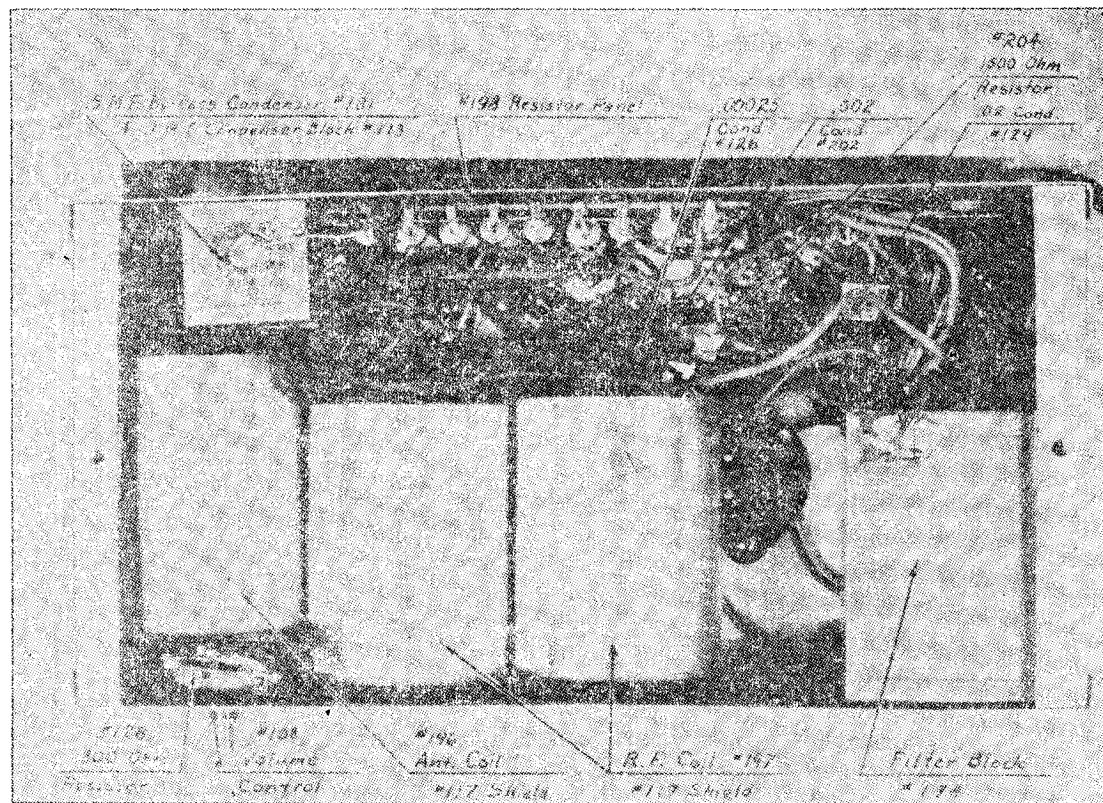


Resistor Panel



MODEL S-4
Chassis

ECHOPHONE RADIO MFG. CO.



ECHOPHONE RADIO MFG. CO.

MODEL S-5
(Dynatron)
Schematic

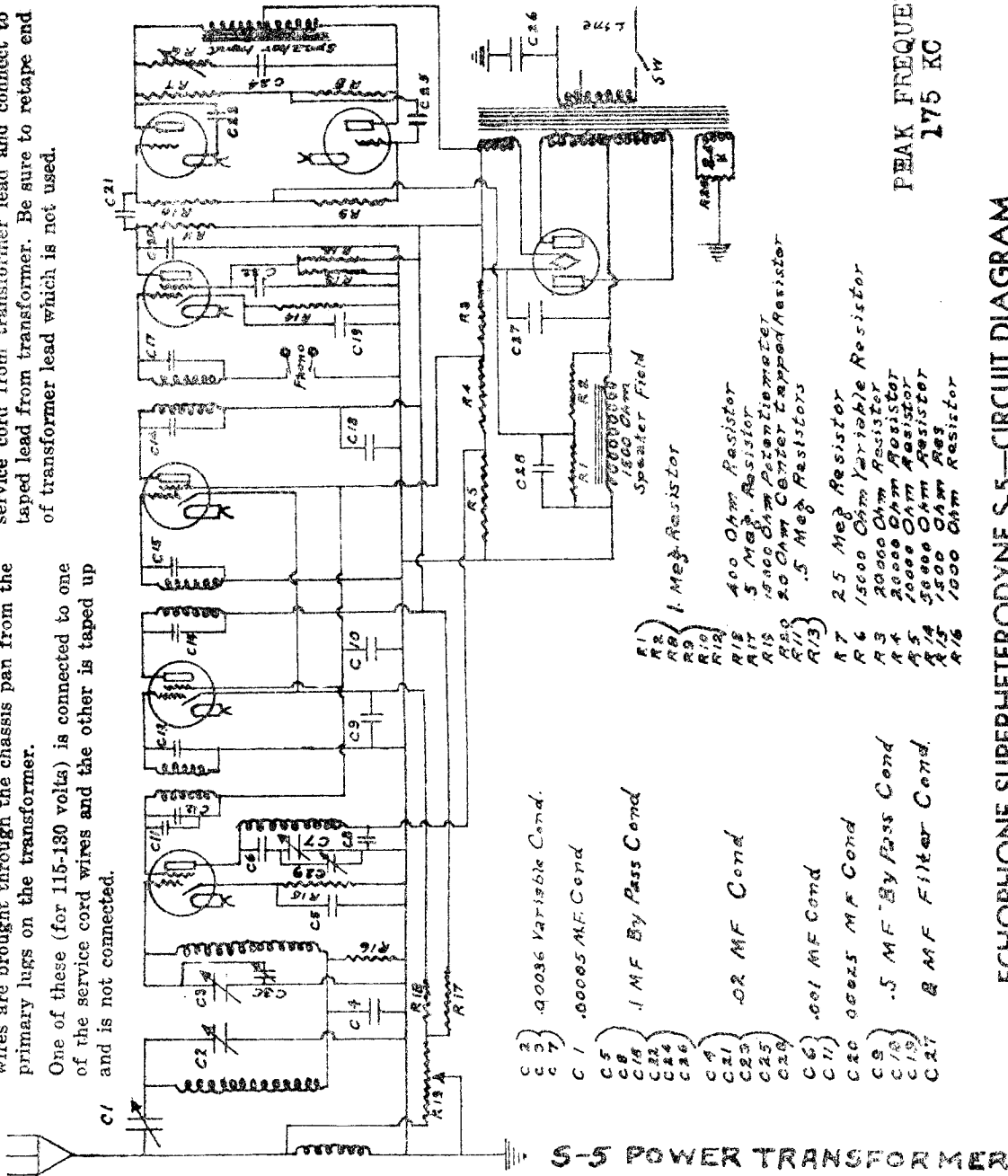
PEAK FREQUENCY
175 KC

ECHOPHONE SUPERHETERODYNE S-5—CIRCUIT DIAGRAM
With DYNATRON Oscillator

To change set for 100 to 115 volts, disconnect the service cord from transformer lead and connect to taped lead from transformer. Be sure to retape end of transformer lead which is not used.

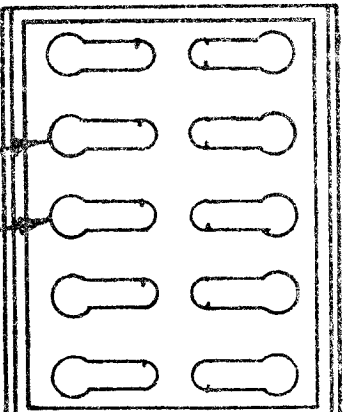
On all sets having serial numbers above 100050, two wires are brought through the chassis pan from the primary lugs on the transformer.

One of these (for 115-130 volts) is connected to one of the service cord wires and the other is taped up and is not connected.

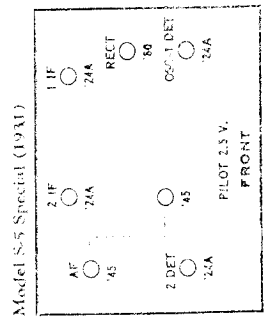


- C 2 } .00036 Variable Cond.
- C 3 }
- C 7 }
- C 1 } .00005 MF. Cond
- C 5 } 1 MF By Pass Cond
- C 8 } .02 MF Cond
- C 18 }
- C 22 }
- C 24 }
- C 26 }
- C 9 } .001 MF Cond
- C 11 }
- C 20 } .0025 MF Cond
- C 8 } .5 MF By Pass Cond
- C 18 }
- C 19 }
- C 27 } 8 MF Filter Cond.
- R 2 } 1 Meg Resistor
- R 3 }
- R 4 }
- R 5 }
- R 6 } 400 Ohm Resistor
- R 7 } 5 Meg Resistor
- R 8 } 15000 Ohm Variable Resistor
- R 9 } 20000 Ohm Resistor
- R 10 } 20000 Ohm Resistor
- R 11 } 20000 Ohm Resistor
- R 12 } 5000 Ohm Resistor
- R 13 } 1500 Ohm Res
- R 14 } 1000 Ohm Resistor
- R 15 } 1500 Ohm Resistor
- R 16 } 1000 Ohm Resistor
- R 17 } 1500 Ohm Resistor
- R 18 }

2.5 VOLT FILAMENT
FOR 100/115 VOLT LINE
REMOVE WIRE FROM
THIS TERMINAL
AND CONNECT TO
THIS TERMINAL
BEGINNING PRIMARY
2.5 VOLT FILAMENT

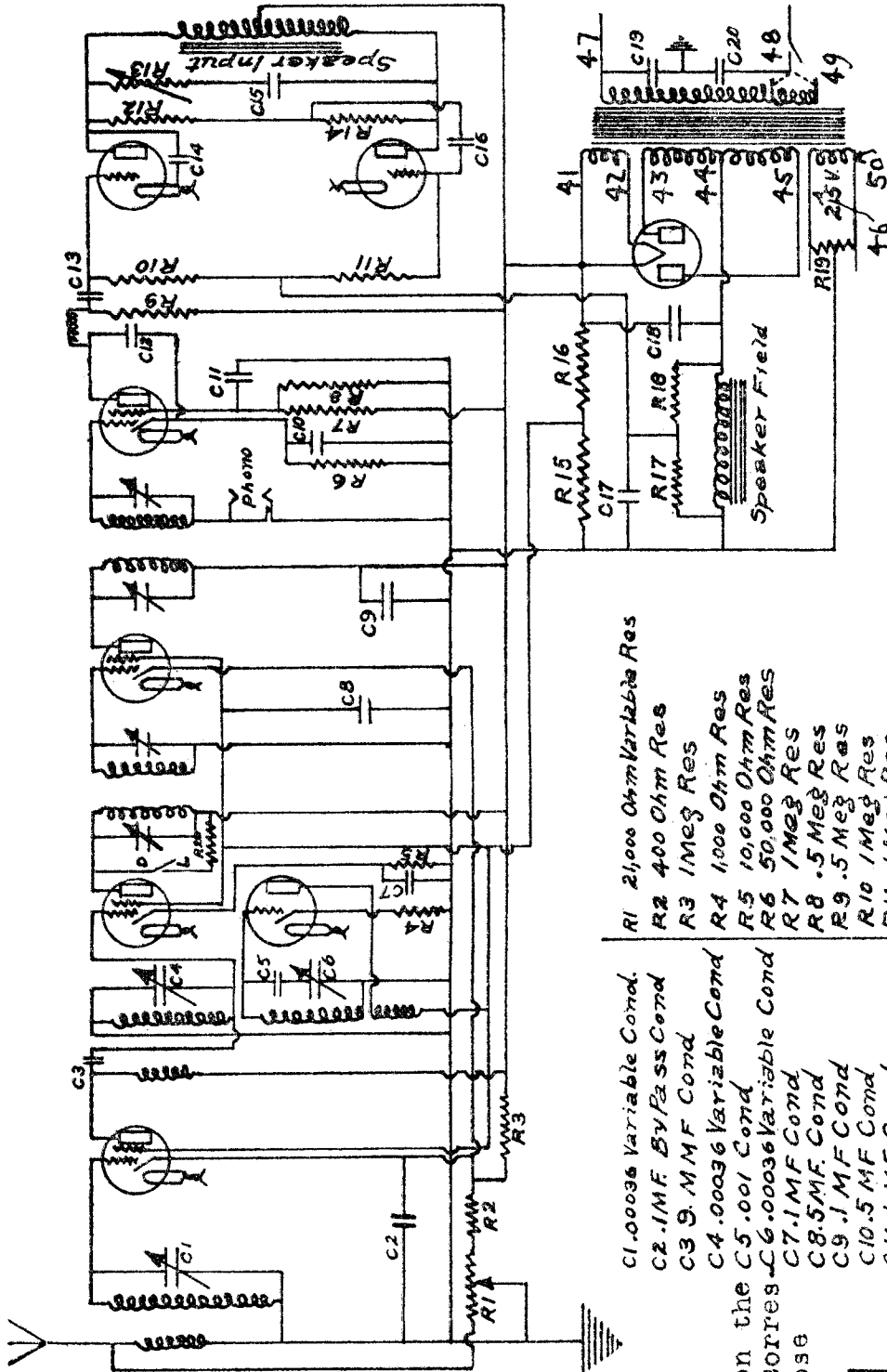


HIGH VOLTAGE
C.T. HIGH VOLTAGE
HIGH VOLTAGE
280 FILAMENT
280 FILAMENT



MODEL S-5 (Rev.)
Schematic

ECHOPHONE RADIO MFG. CO.



Echophone Superheterodyne

Model S-5

CIRCUIT DIAGRAM

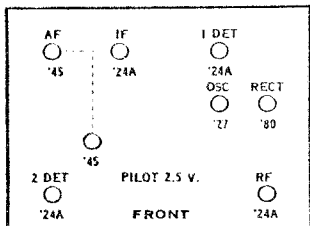
- R1 2,000 Ohm Variable Res
- R2 400 Ohm Res
- R3 1 Meg Res
- R4 1000 Ohm Res
- R5 10,000 Ohm Res
- R6 50,000 Ohm Res
- R7 1 Meg Res
- R8 .5 Meg Res
- R9 .5 Meg Res
- R10 1 Meg Res
- R11 1 Meg Res
- R12 .25 Meg Res
- R13 15,000 Ohm Variable Res
- R14 1 Meg Res
- R15 50,000 Ohm Res
- R16 20,000 Ohm Res
- R17 1 Meg Res
- R18 1 Meg Res
- R19 20 Ohm Center Tapped Res
- R20 5,000 Ohm Res.

- C1 .00036 Variable Cond.
- C2 .1 MF Bypass Cond
- C3 9. M MF Cond
- C4 .00036 Variable Cond
- C5 .001 Cond
- C6 .00036 Variable Cond
- C7 .1 MF Cond
- C8 .5 MF Cond
- C9 .1 MF Cond
- C10 .5 MF Cond
- C11 .1 MF Cond
- C12 .00025 Cond
- C13 .02 MF Cond
- C14 .02 MF Cond
- C15 .1 MF Cond
- C16 .02 MF Cond
- C17 .02 MF Cond
- C18 8. MF Cond
- C19 .05 MF Cond
- C20 .05 MF Cond

The numbers on the Pwr. Trans. correspond with those shown below.

41	460
42	470
43	480
44	490
45	500
Power Transformer	

Model S-5 (1931)

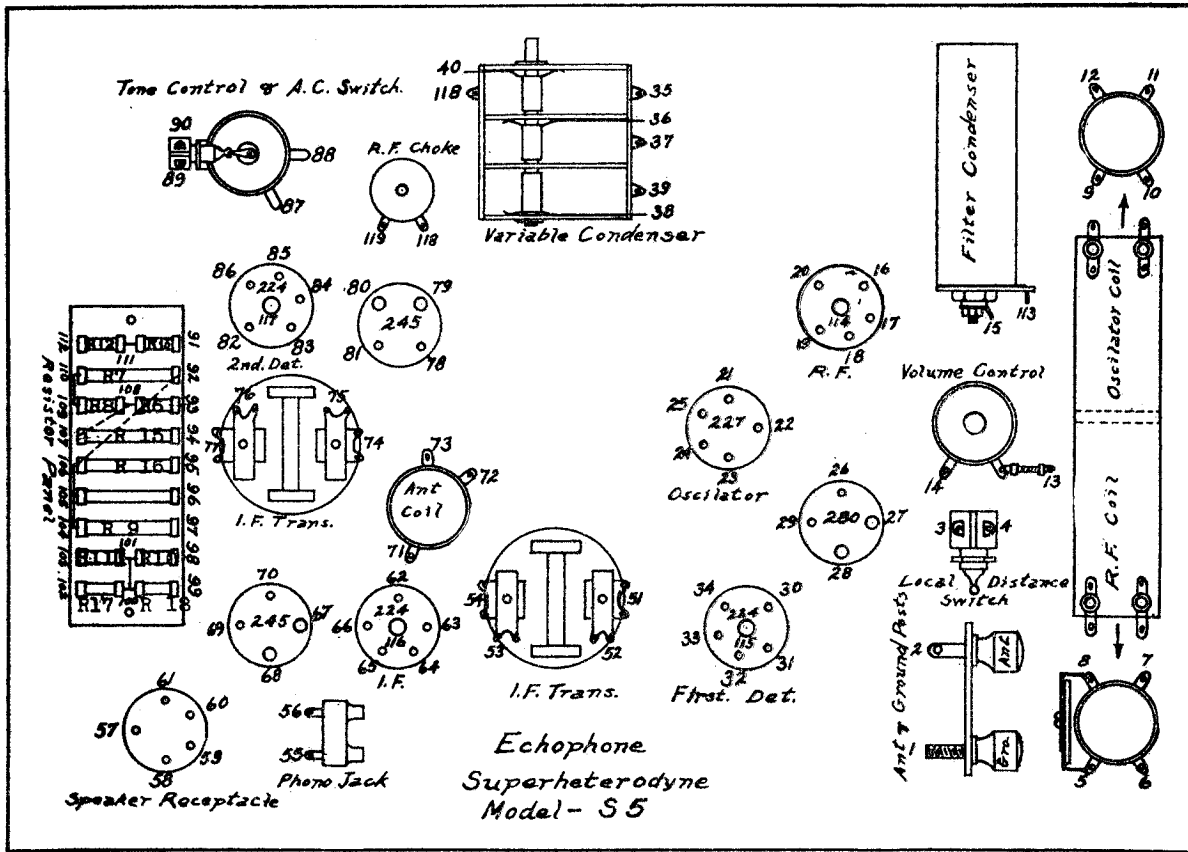


PEAK
FREQUENCY

175 KC

ECHOPHONE RADIO MFG. CO.

MODEL S-5
Voltage
Data



Echophone
Superheterodyne
Model - S5

Model S-5

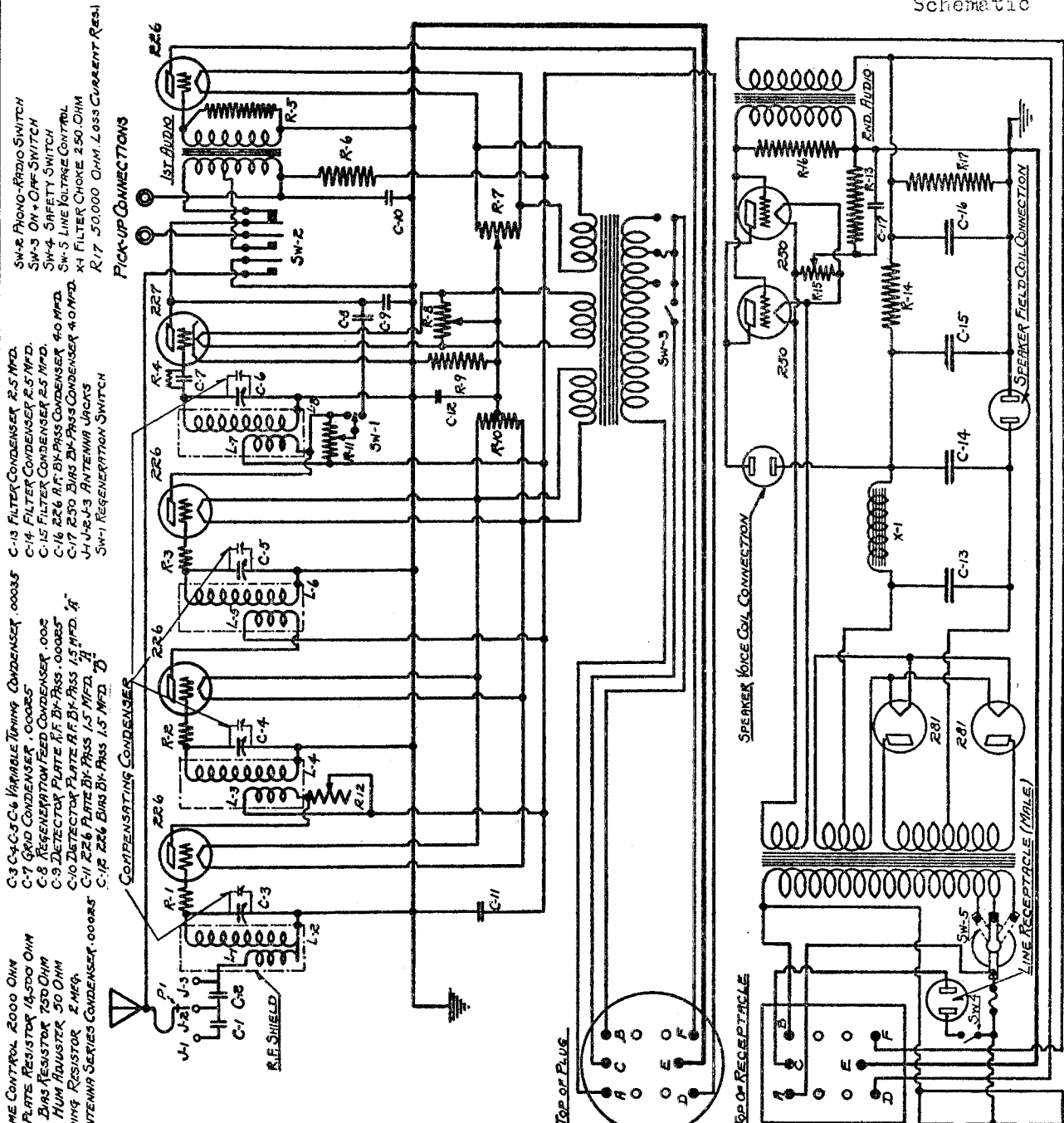
VOLTAGE TESTS

Voltages given are tested on 250-volt scale of 1000 ohms, per volt meter.
All voltage tests were made with volume control on full and tone control in off position, no signal in receiver, line voltage 115 volts with A. C. line connected to terminals 47-49 on power transformer.
Speaker must be connected to receiver.

R. F. Plate #19 to ground	Low 210 volts Normal 220 volts High 230 volts	First Detector Screen #80 to ground	Low 75 volts Normal 80 volts High 90 volts
R. F. Screen #20 to ground	Low 75 volts Normal 80 volts High 90 volts	First Detector Cathode #81 to ground	5 to 7 volts
R. F. Cathode #16 to ground	1.5 to 3 volts	Second Detector Plate #83 to ground	60 to 80 volts
Oscillator Plate #21 to ground	Low 75 volts Normal 80 volts High 90 volts	Second Detector Screen #82 to ground	Low 25 volts Normal 30 volts High 35 volts
Oscillator Cathode #28 to ground	4 to 6 volts	Second Detector Cathode #86 to ground	5 to 7 volts
I. F. Plate #66 to ground	Low 210 volts Normal 220 volts High 230 volts	245 Plates #61-63 to ground	Low 210 volts Normal 220 volts High 230 volts
I. F. Screen #62 to ground	Low 75 volts Normal 80 volts High 90 volts	245 Bias #101 to ground	Neg. 20 to 40 volts
I. F. Cathode #63 to ground	1.5 to 3 volts	Speaker Field Voltage Drop #60-69	Low 90 volts Normal 100 volts High 110 volts
First Detector Plate #84 to ground	Low 210 volts Normal 220 volts High 230 volts	280 Filament #27-28	4.5 to 5.2 volts
		Filaments for All 2.5 Volt Tubes #67-68	2.2 to 2.5 volts

THOMAS A. EDISON, INC.

MODEL C-1
CHASSIS 5C
Schematic



- PICK-UP CONNECTIONS**
- SW-2 PHONO-PIANO SWITCH
 - SW-3 ON + OFF SWITCH
 - SW-4 SAFETY SWITCH
 - SW-5 LINE VOLTAGE CONTROL
 - X1 FILTER CHOKE 250 OHM
 - X4 50,000 OHM LOSS CURRENT RES.
 - R-17 50,000 OHM LOSS CURRENT RES.
- COMPENSATING CONDENSERS**
- C-3 C4-C6 VARIABLE TUNING CONDENSER 00035
 - C-7 GRID CONDENSER 00025
 - C-8 REGENERATION FEED CONDENSER 002
 - C-9 DETECTOR PLATE P.P. BY-PASS 00035
 - C-10 DETECTOR PLATE R.F. BY-PASS 15 MFD. 4"
 - C-11 250 OHM BY-PASS CONDENSER 40 MFD.
 - C-12 250 OHM BY-PASS 15 MFD. 2"
 - C-13 250 OHM BY-PASS 15 MFD. 2"
 - C-14 FILTER CONDENSER 2.5 MFD.
 - C-15 FILTER CONDENSER 2.5 MFD.
 - C-16 250 OHM BY-PASS CONDENSER 40 MFD.
 - C-17 250 OHM BY-PASS CONDENSER 40 MFD.
 - C-18 250 OHM BY-PASS 15 MFD. 2"
- COMPENSATING CONDENSERS**
- C-13 250 OHM BY-PASS 15 MFD. 2"
 - C-14 250 OHM BY-PASS 15 MFD. 2"
 - C-15 250 OHM BY-PASS 15 MFD. 2"
 - C-16 250 OHM BY-PASS 15 MFD. 2"
 - C-17 250 OHM BY-PASS 15 MFD. 2"
 - C-18 250 OHM BY-PASS 15 MFD. 2"
- RESISTORS**
- R-12 VOLUME CONTROL 2000 OHM
 - R-14 226 PLATE RESISTOR 15,500 OHM
 - R-15 250 OHM BY-PASS RESISTOR 750 OHM
 - R-16 250 OHM BY-PASS RESISTOR 750 OHM
 - R-17 250 OHM BY-PASS RESISTOR 750 OHM
 - R-18 250 OHM BY-PASS RESISTOR 750 OHM
 - R-19 250 OHM BY-PASS RESISTOR 750 OHM
 - R-20 250 OHM BY-PASS RESISTOR 750 OHM
 - R-21 250 OHM BY-PASS RESISTOR 750 OHM
 - R-22 250 OHM BY-PASS RESISTOR 750 OHM
 - R-23 250 OHM BY-PASS RESISTOR 750 OHM
 - R-24 250 OHM BY-PASS RESISTOR 750 OHM
 - R-25 250 OHM BY-PASS RESISTOR 750 OHM
 - R-26 250 OHM BY-PASS RESISTOR 750 OHM
 - R-27 250 OHM BY-PASS RESISTOR 750 OHM
 - R-28 250 OHM BY-PASS RESISTOR 750 OHM
 - R-29 250 OHM BY-PASS RESISTOR 750 OHM
 - R-30 250 OHM BY-PASS RESISTOR 750 OHM
 - R-31 250 OHM BY-PASS RESISTOR 750 OHM
 - R-32 250 OHM BY-PASS RESISTOR 750 OHM
 - R-33 250 OHM BY-PASS RESISTOR 750 OHM
 - R-34 250 OHM BY-PASS RESISTOR 750 OHM
 - R-35 250 OHM BY-PASS RESISTOR 750 OHM
 - R-36 250 OHM BY-PASS RESISTOR 750 OHM
 - R-37 250 OHM BY-PASS RESISTOR 750 OHM
 - R-38 250 OHM BY-PASS RESISTOR 750 OHM
 - R-39 250 OHM BY-PASS RESISTOR 750 OHM
 - R-40 250 OHM BY-PASS RESISTOR 750 OHM
 - R-41 250 OHM BY-PASS RESISTOR 750 OHM
 - R-42 250 OHM BY-PASS RESISTOR 750 OHM
 - R-43 250 OHM BY-PASS RESISTOR 750 OHM
 - R-44 250 OHM BY-PASS RESISTOR 750 OHM
 - R-45 250 OHM BY-PASS RESISTOR 750 OHM
 - R-46 250 OHM BY-PASS RESISTOR 750 OHM
 - R-47 250 OHM BY-PASS RESISTOR 750 OHM
 - R-48 250 OHM BY-PASS RESISTOR 750 OHM
 - R-49 250 OHM BY-PASS RESISTOR 750 OHM
 - R-50 250 OHM BY-PASS RESISTOR 750 OHM
 - R-51 250 OHM BY-PASS RESISTOR 750 OHM
 - R-52 250 OHM BY-PASS RESISTOR 750 OHM
 - R-53 250 OHM BY-PASS RESISTOR 750 OHM
 - R-54 250 OHM BY-PASS RESISTOR 750 OHM
 - R-55 250 OHM BY-PASS RESISTOR 750 OHM
 - R-56 250 OHM BY-PASS RESISTOR 750 OHM
 - R-57 250 OHM BY-PASS RESISTOR 750 OHM
 - R-58 250 OHM BY-PASS RESISTOR 750 OHM
 - R-59 250 OHM BY-PASS RESISTOR 750 OHM
 - R-60 250 OHM BY-PASS RESISTOR 750 OHM
 - R-61 250 OHM BY-PASS RESISTOR 750 OHM
 - R-62 250 OHM BY-PASS RESISTOR 750 OHM
 - R-63 250 OHM BY-PASS RESISTOR 750 OHM
 - R-64 250 OHM BY-PASS RESISTOR 750 OHM
 - R-65 250 OHM BY-PASS RESISTOR 750 OHM
 - R-66 250 OHM BY-PASS RESISTOR 750 OHM
 - R-67 250 OHM BY-PASS RESISTOR 750 OHM
 - R-68 250 OHM BY-PASS RESISTOR 750 OHM
 - R-69 250 OHM BY-PASS RESISTOR 750 OHM
 - R-70 250 OHM BY-PASS RESISTOR 750 OHM
 - R-71 250 OHM BY-PASS RESISTOR 750 OHM
 - R-72 250 OHM BY-PASS RESISTOR 750 OHM
 - R-73 250 OHM BY-PASS RESISTOR 750 OHM
 - R-74 250 OHM BY-PASS RESISTOR 750 OHM
 - R-75 250 OHM BY-PASS RESISTOR 750 OHM
 - R-76 250 OHM BY-PASS RESISTOR 750 OHM
 - R-77 250 OHM BY-PASS RESISTOR 750 OHM
 - R-78 250 OHM BY-PASS RESISTOR 750 OHM
 - R-79 250 OHM BY-PASS RESISTOR 750 OHM
 - R-80 250 OHM BY-PASS RESISTOR 750 OHM
 - R-81 250 OHM BY-PASS RESISTOR 750 OHM
 - R-82 250 OHM BY-PASS RESISTOR 750 OHM
 - R-83 250 OHM BY-PASS RESISTOR 750 OHM
 - R-84 250 OHM BY-PASS RESISTOR 750 OHM
 - R-85 250 OHM BY-PASS RESISTOR 750 OHM
 - R-86 250 OHM BY-PASS RESISTOR 750 OHM
 - R-87 250 OHM BY-PASS RESISTOR 750 OHM
 - R-88 250 OHM BY-PASS RESISTOR 750 OHM
 - R-89 250 OHM BY-PASS RESISTOR 750 OHM
 - R-90 250 OHM BY-PASS RESISTOR 750 OHM
 - R-91 250 OHM BY-PASS RESISTOR 750 OHM
 - R-92 250 OHM BY-PASS RESISTOR 750 OHM
 - R-93 250 OHM BY-PASS RESISTOR 750 OHM
 - R-94 250 OHM BY-PASS RESISTOR 750 OHM
 - R-95 250 OHM BY-PASS RESISTOR 750 OHM
 - R-96 250 OHM BY-PASS RESISTOR 750 OHM
 - R-97 250 OHM BY-PASS RESISTOR 750 OHM
 - R-98 250 OHM BY-PASS RESISTOR 750 OHM
 - R-99 250 OHM BY-PASS RESISTOR 750 OHM
 - R-100 250 OHM BY-PASS RESISTOR 750 OHM

EDISON, Inc.—Phonograph Combination C-1
Line Voltage 102—Set on 102.5 Volt Tap
Volume Control Position Max

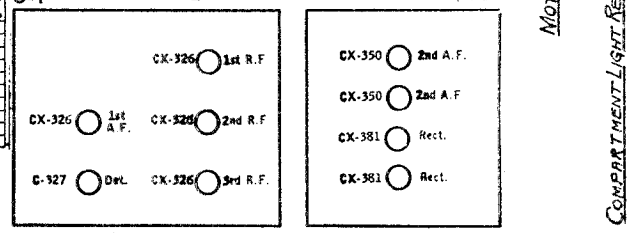
TUBE	TYPE	POSITION	TUBE OR TUBES											
			FILAMENT		GRID		CONTROL		CATHODE		PLATE			
NO.	TYPE	TYPE	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS
226	1 R.F.	1	1.45	120	9.5	3.5	10	6.5	10	6.5	10	6.5	10	6.5
226	2 R.F.	2	1.45	120	9.5	3.5	10	6.5	10	6.5	10	6.5	10	6.5
226	3 R.F.	3	1.45	120	9.5	3.5	10	6.5	10	6.5	10	6.5	10	6.5
227	2 A.F.	4	2.1	35	9.5	2	10	6.5	10	6.5	10	6.5	10	6.5
250	1 A.F.	5	1.4	110	9	3	10	7	10	7	10	7	10	7
250	2 A.F.	6	7.25	405	70	96	130	33	100	33	100	33	100	33
250	2 A.F.	7	7.25	405	70	96	130	33	100	33	100	33	100	33
251	Rect.	8	7.2	405	70	96	130	33	100	33	100	33	100	33
251	Rect.	9	7.2	405	70	96	130	33	100	33	100	33	100	33

EDISON RADIO MODEL C-1

CHASSIS 5C.

Also

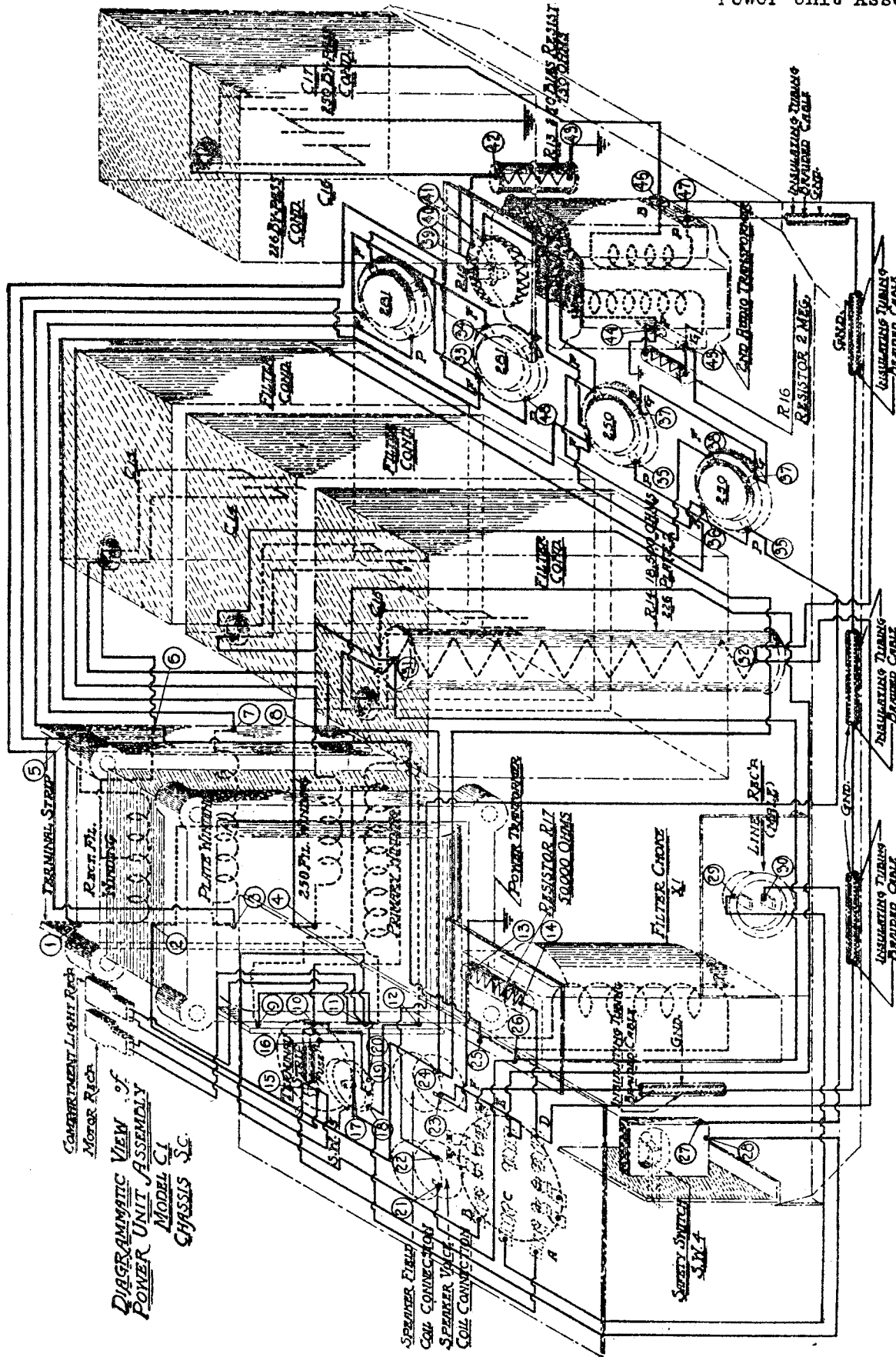
Model Splitdorf M-6



- CX-326 1st A.F.
- CX-326 2nd R.F.
- CX-326 3rd R.F.
- CX-350 2nd A.F.
- CX-350 2nd A.F.
- CX-381 Rect.
- CX-381 Rect.
- C-327 0vL.

THOMAS A. EDISON, INC.

MODEL C-1
CHASSIS SC
Power Unit Assembly



*DIAGRAMMATIC VIEW OF
POWER UNIT ASSEMBLY
MODEL C1
CHASSIS SC.*

*COMPARTMENT LIGHT RECH
MOTOR RECH.*

*SPINNER FIRST
COIL CONNECTION
SPINNER VOLT
COIL CONNECTION*

*SAFETY SWITCH
SW1*

*INSULATING TUBING
SHROUDED CABLE*

*INSULATING TUBING
SHROUDED CABLE*

*INSULATING TUBING
SHROUDED CABLE*

*INSULATING TUBING
SHROUDED CABLE*

*INSULATING TUBING
SHROUDED CABLE*

*INSULATING TUBING
SHROUDED CABLE*

*RELAY CONTACTS
RECH. RECH.*

250 PL. WINDING

250 PL. WINDING

250 PL. WINDING

250 PL. WINDING

250 PL. WINDING

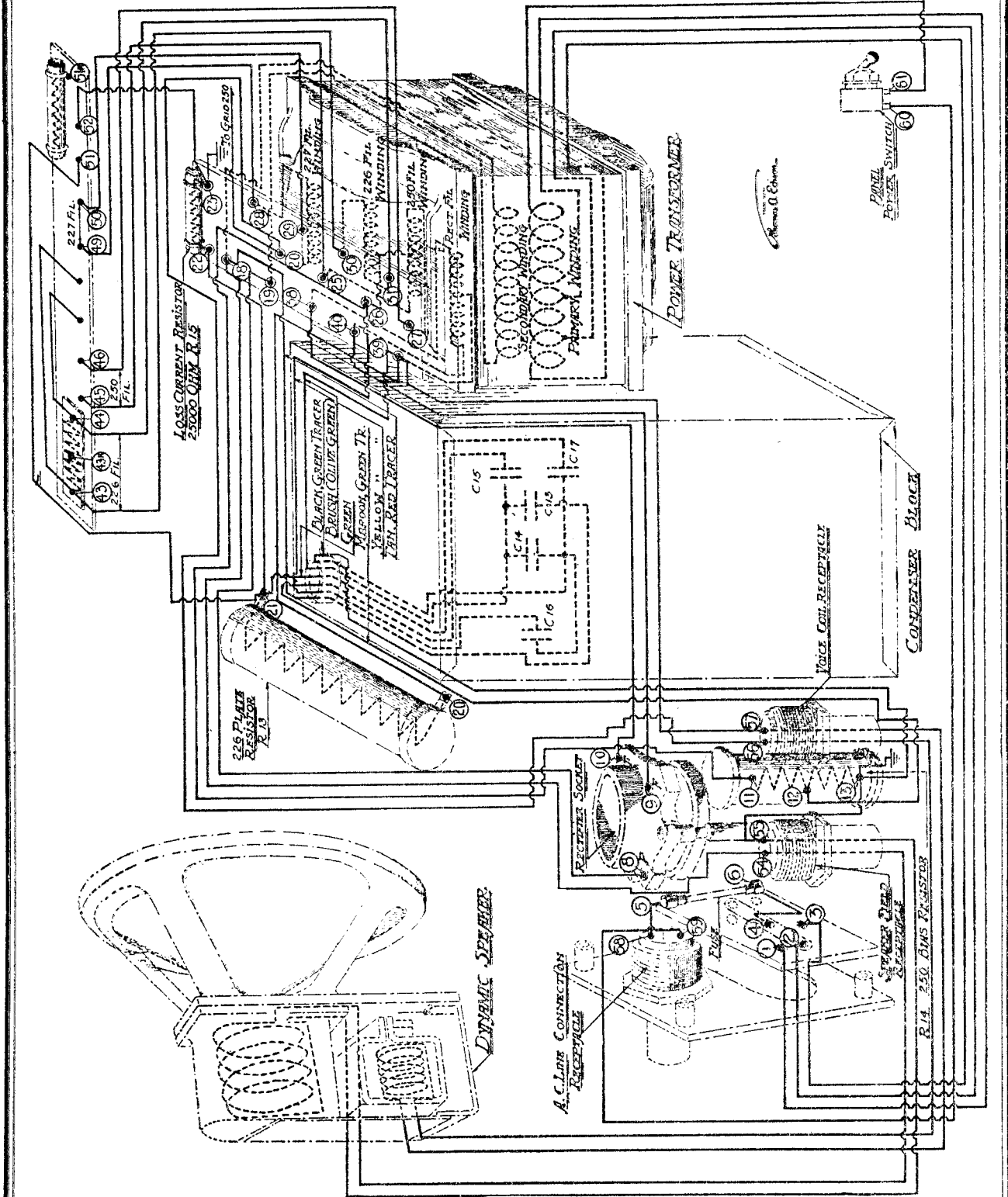
250 PL. WINDING

250 PL. WINDING

250 PL. WINDING

THOMAS A. EDISON, INC.

MODELS R1, R2, C2
CHASSIS Jr and Jc
Power Unit Assembly

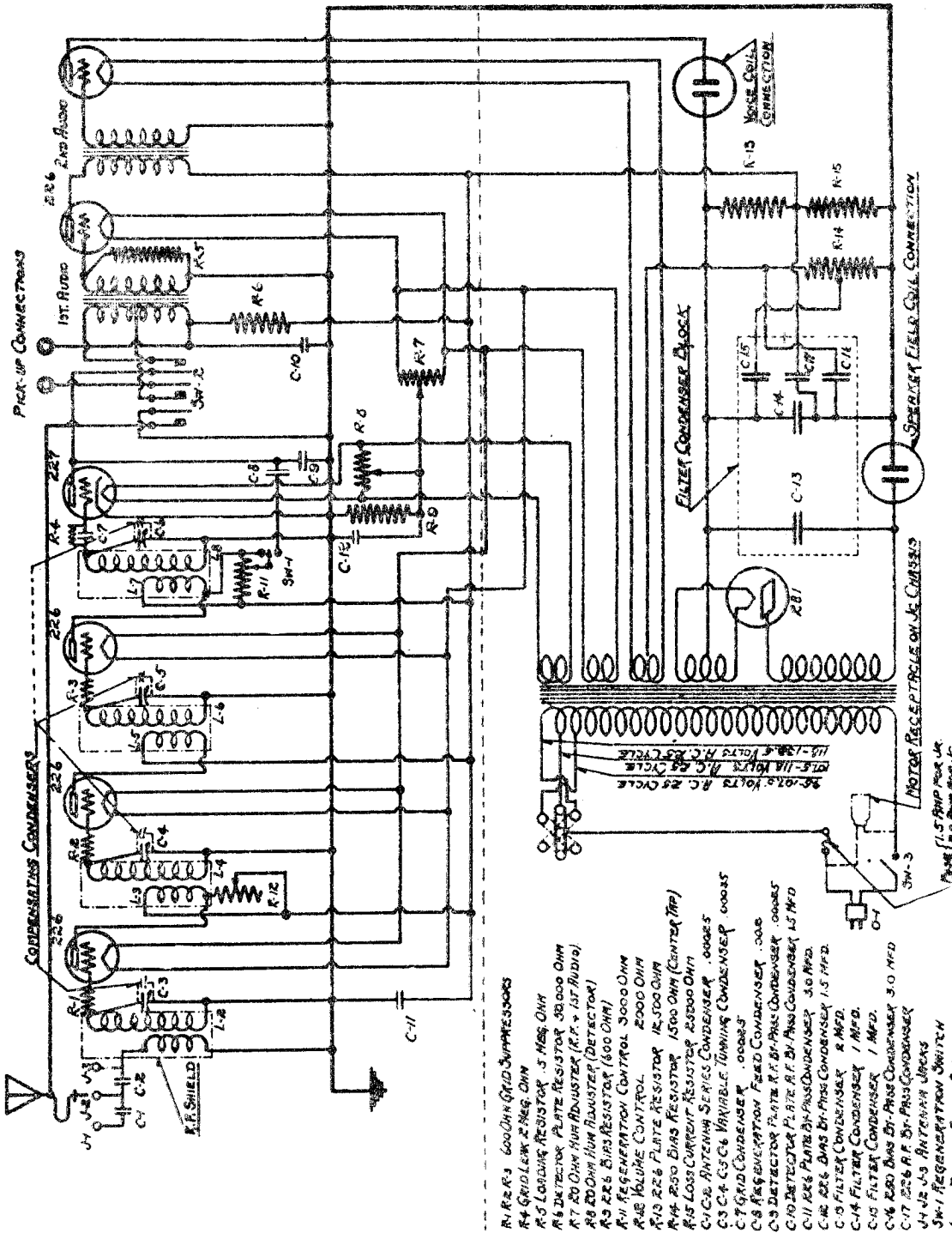


DIAGRAMMATIC VIEW OF POWER UNIT; DYNAMIC SPEAKER CONNECTED.

MODELS R1, R2 AND C2
CHASSIS JR AND JC
25 CYCLE

MODELS R1, R2, C2
CHASSIS Jr and Jc
Schematic Voltage

THOMAS A. EDISON, INC.



- R-1 R-3 600 OHM GRID SUPPRESSORS
- R-4 GRID LEAK 2 MEG OHM
- R-5 LOADING RESISTOR 5 MEG OHM
- R-6 DETECTOR PLATE RESISTOR 30,000 OHM
- R-7 20 OHM A.F. RESISTOR (R.F. + 1ST AUDIO)
- R-8 20 OHM A.F. RESISTOR (DETECTOR)
- R-9 20 OHM A.F. RESISTOR (500 OHM)
- R-10 20 OHM A.F. RESISTOR 3000 OHM
- R-11 VOLUME CONTROL 2000 OHM
- R-12 20 OHM A.F. RESISTOR 15,000 OHM
- R-13 20 OHM A.F. RESISTOR 1500 OHM (CENTER TAP)
- R-14 20 OHM A.F. RESISTOR 25,000 OHM
- R-15 20 OHM A.F. RESISTOR 10,000 OHM
- R-16 20 OHM A.F. RESISTOR 10,000 OHM
- R-17 20 OHM A.F. RESISTOR 10,000 OHM
- R-18 20 OHM A.F. RESISTOR 10,000 OHM
- R-19 20 OHM A.F. RESISTOR 10,000 OHM
- R-20 20 OHM A.F. RESISTOR 10,000 OHM
- R-21 20 OHM A.F. RESISTOR 10,000 OHM
- R-22 20 OHM A.F. RESISTOR 10,000 OHM
- R-23 20 OHM A.F. RESISTOR 10,000 OHM
- R-24 20 OHM A.F. RESISTOR 10,000 OHM
- R-25 20 OHM A.F. RESISTOR 10,000 OHM
- R-26 20 OHM A.F. RESISTOR 10,000 OHM
- R-27 20 OHM A.F. RESISTOR 10,000 OHM
- R-28 20 OHM A.F. RESISTOR 10,000 OHM
- R-29 20 OHM A.F. RESISTOR 10,000 OHM
- R-30 20 OHM A.F. RESISTOR 10,000 OHM
- R-31 20 OHM A.F. RESISTOR 10,000 OHM
- R-32 20 OHM A.F. RESISTOR 10,000 OHM
- R-33 20 OHM A.F. RESISTOR 10,000 OHM
- R-34 20 OHM A.F. RESISTOR 10,000 OHM
- R-35 20 OHM A.F. RESISTOR 10,000 OHM
- R-36 20 OHM A.F. RESISTOR 10,000 OHM
- R-37 20 OHM A.F. RESISTOR 10,000 OHM
- R-38 20 OHM A.F. RESISTOR 10,000 OHM
- R-39 20 OHM A.F. RESISTOR 10,000 OHM
- R-40 20 OHM A.F. RESISTOR 10,000 OHM
- R-41 20 OHM A.F. RESISTOR 10,000 OHM
- R-42 20 OHM A.F. RESISTOR 10,000 OHM
- R-43 20 OHM A.F. RESISTOR 10,000 OHM
- R-44 20 OHM A.F. RESISTOR 10,000 OHM
- R-45 20 OHM A.F. RESISTOR 10,000 OHM
- R-46 20 OHM A.F. RESISTOR 10,000 OHM
- R-47 20 OHM A.F. RESISTOR 10,000 OHM
- R-48 20 OHM A.F. RESISTOR 10,000 OHM
- R-49 20 OHM A.F. RESISTOR 10,000 OHM
- R-50 20 OHM A.F. RESISTOR 10,000 OHM
- R-51 20 OHM A.F. RESISTOR 10,000 OHM
- R-52 20 OHM A.F. RESISTOR 10,000 OHM
- R-53 20 OHM A.F. RESISTOR 10,000 OHM
- R-54 20 OHM A.F. RESISTOR 10,000 OHM
- R-55 20 OHM A.F. RESISTOR 10,000 OHM
- R-56 20 OHM A.F. RESISTOR 10,000 OHM
- R-57 20 OHM A.F. RESISTOR 10,000 OHM
- R-58 20 OHM A.F. RESISTOR 10,000 OHM
- R-59 20 OHM A.F. RESISTOR 10,000 OHM
- R-60 20 OHM A.F. RESISTOR 10,000 OHM
- R-61 20 OHM A.F. RESISTOR 10,000 OHM
- R-62 20 OHM A.F. RESISTOR 10,000 OHM
- R-63 20 OHM A.F. RESISTOR 10,000 OHM
- R-64 20 OHM A.F. RESISTOR 10,000 OHM
- R-65 20 OHM A.F. RESISTOR 10,000 OHM
- R-66 20 OHM A.F. RESISTOR 10,000 OHM
- R-67 20 OHM A.F. RESISTOR 10,000 OHM
- R-68 20 OHM A.F. RESISTOR 10,000 OHM
- R-69 20 OHM A.F. RESISTOR 10,000 OHM
- R-70 20 OHM A.F. RESISTOR 10,000 OHM
- R-71 20 OHM A.F. RESISTOR 10,000 OHM
- R-72 20 OHM A.F. RESISTOR 10,000 OHM
- R-73 20 OHM A.F. RESISTOR 10,000 OHM
- R-74 20 OHM A.F. RESISTOR 10,000 OHM
- R-75 20 OHM A.F. RESISTOR 10,000 OHM
- R-76 20 OHM A.F. RESISTOR 10,000 OHM
- R-77 20 OHM A.F. RESISTOR 10,000 OHM
- R-78 20 OHM A.F. RESISTOR 10,000 OHM
- R-79 20 OHM A.F. RESISTOR 10,000 OHM
- R-80 20 OHM A.F. RESISTOR 10,000 OHM
- R-81 20 OHM A.F. RESISTOR 10,000 OHM
- R-82 20 OHM A.F. RESISTOR 10,000 OHM
- R-83 20 OHM A.F. RESISTOR 10,000 OHM
- R-84 20 OHM A.F. RESISTOR 10,000 OHM
- R-85 20 OHM A.F. RESISTOR 10,000 OHM
- R-86 20 OHM A.F. RESISTOR 10,000 OHM
- R-87 20 OHM A.F. RESISTOR 10,000 OHM
- R-88 20 OHM A.F. RESISTOR 10,000 OHM
- R-89 20 OHM A.F. RESISTOR 10,000 OHM
- R-90 20 OHM A.F. RESISTOR 10,000 OHM
- R-91 20 OHM A.F. RESISTOR 10,000 OHM
- R-92 20 OHM A.F. RESISTOR 10,000 OHM
- R-93 20 OHM A.F. RESISTOR 10,000 OHM
- R-94 20 OHM A.F. RESISTOR 10,000 OHM
- R-95 20 OHM A.F. RESISTOR 10,000 OHM
- R-96 20 OHM A.F. RESISTOR 10,000 OHM
- R-97 20 OHM A.F. RESISTOR 10,000 OHM
- R-98 20 OHM A.F. RESISTOR 10,000 OHM
- R-99 20 OHM A.F. RESISTOR 10,000 OHM
- R-100 20 OHM A.F. RESISTOR 10,000 OHM

EDISON R1, R2 and C2
Chassis Jr and Jc (25 cycle)

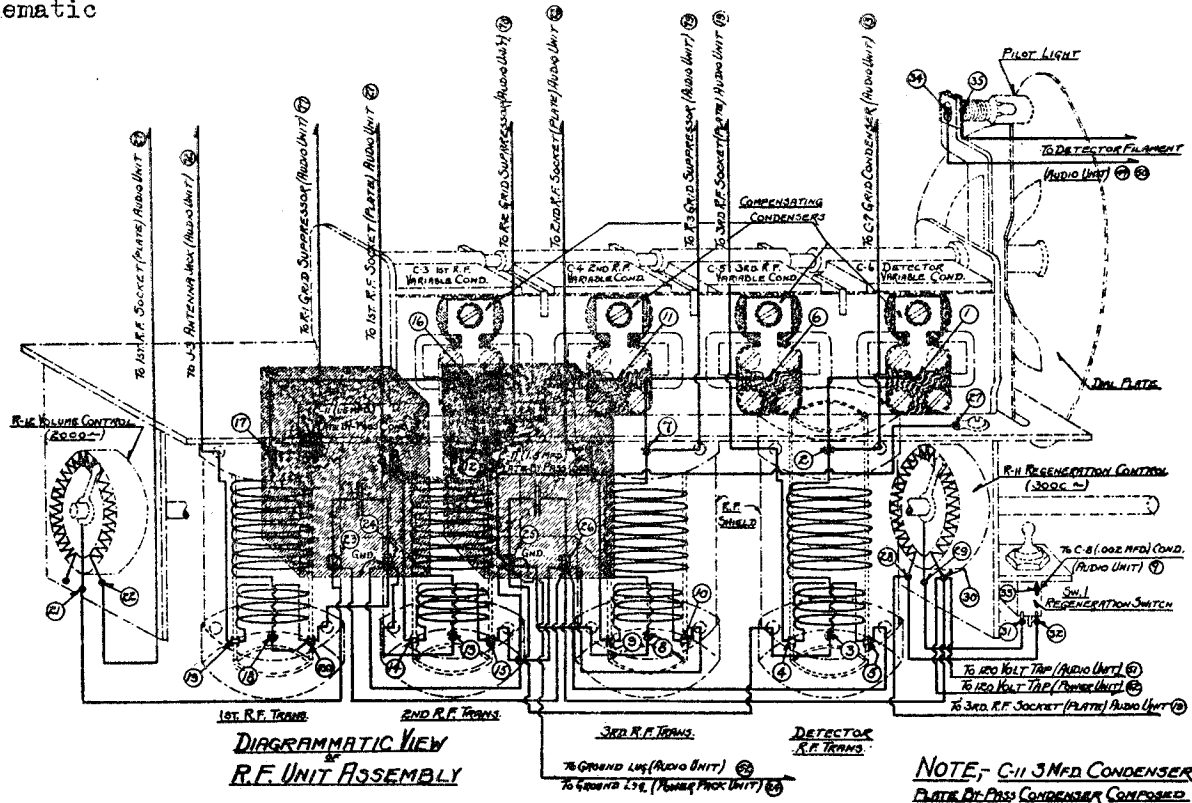
R-1, R-2, C-2 (A.C.)

CX-350	2nd A.F.	CX-325	1st R.F.	CX-381	Rect.
CX-325	1st A.F.	CX-326	2nd R.F.		
C-327	Det.	CX-326	3rd R.F.		

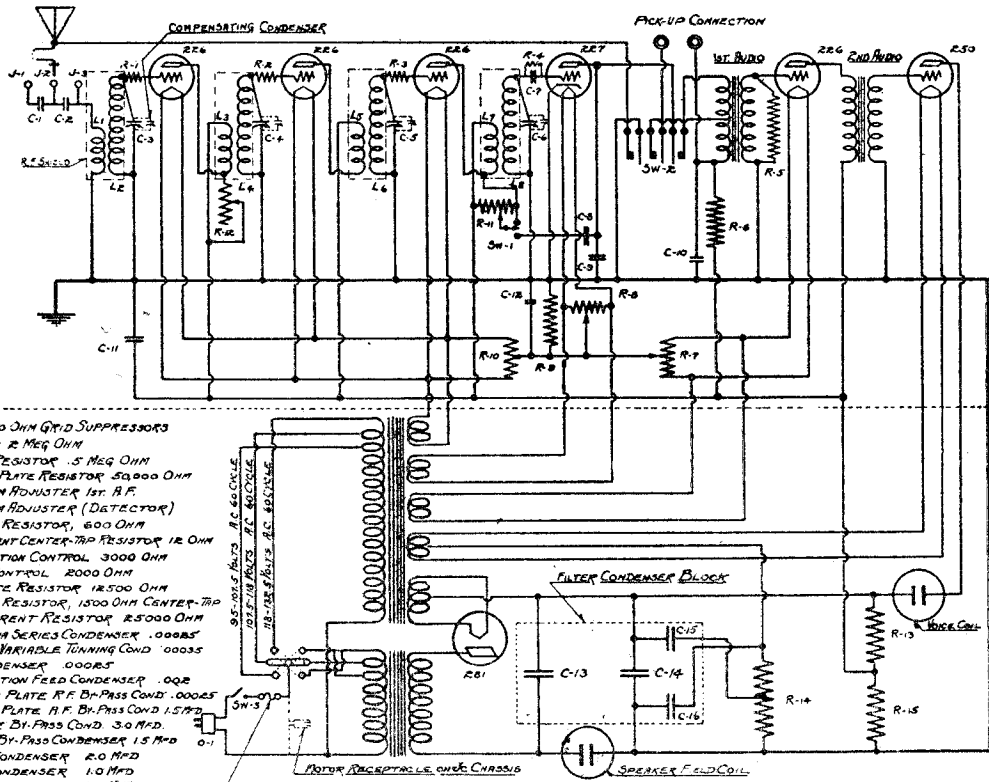
EDISON, Inc.—Models R-1, R-2 and Edison Radio
Phonograph Combination C-2
Line Voltage 102—Set on 102.5
Volume Control Position Max

TUBE ORDER NO.	TYPE OF TUBE	POSITION OF TUBE 1ST AT SET, ETC.	VOLTAGE			CURRENT			PLATE RESISTANCE (OHMS)	SCREEN RESISTANCE (OHMS)	CONTROL RESISTANCE (OHMS)	SERVICING DATA (OHMS)
			A	B	C	GRID	PLATE	SCREEN				
227	1 R.F.		1.45	120	9.5	3.5	10	5.0				
280	2 R.F.		1.45	120	9.5	3.5	10	5.0				
280	3 R.F.		1.45	120	9.5	3.5	10	5.0				
227	Det.		1.5	115	8.5	3.5	10	7.5				
227	1 A.F.		1.2	120	5.5	30	50	20				
227	2 A.F.		1.2	120	5.5	30	50	20				
251	Vtrod.		1.2	120	5.5	30	50	20				

MODELS R1,R2,C2(60 cyc.) THOMAS A. EDISON, INC.
 Diagram Schematic



NOTE: C-11 3 MFD CONDENSER PLATE OF PASS CONDENSER COMPOSED OF TWO 1.5 MFD. CONDENSERS IN PARALLEL

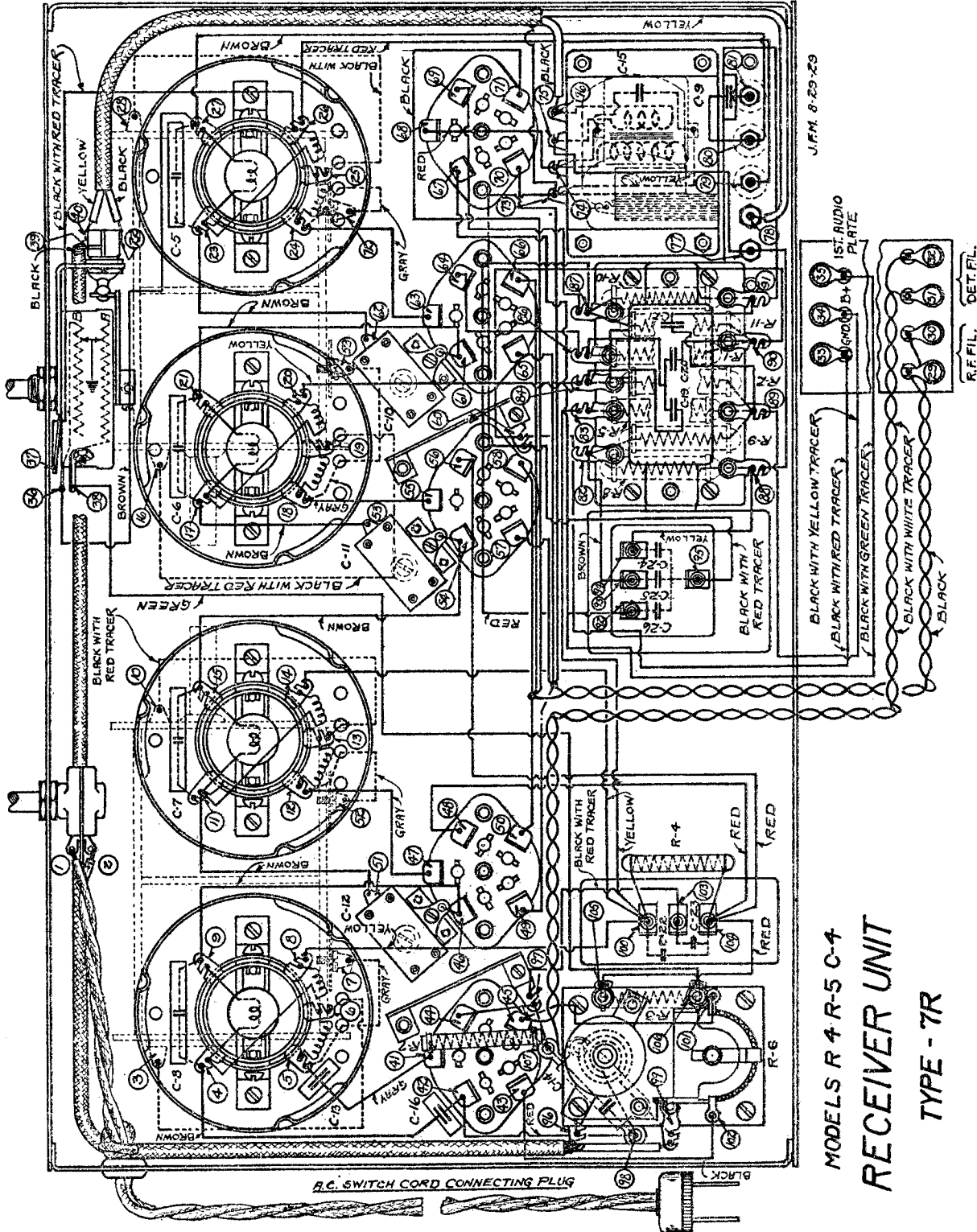


- R1, R2, R3 200 OHM GRID SUPPRESSORS
- R4 GRID LEAK 2 MEG OHM
- R5 LOADING RESISTOR .5 MEG OHM
- R6 DETECTOR PLATE RESISTOR 50,000 OHM
- R7 200 OHM HUN ADJUSTER (1st. A.F.)
- R8 200 OHM HUN ADJUSTER (DETECTOR)
- R9 200 OHM BIAS RESISTOR, 600 OHM
- R10 R.F. FILAMENT CENTER-TAP RESISTOR 12 OHM
- R11 REGENERATION CONTROL 3000 OHM
- R12 VOLUME CONTROL 2000 OHM
- R13 R16 PLATE RESISTOR 15,000 OHM
- R14 250 BIAS RESISTOR, 1500 OHM CENTER-TAP
- R15 LOSS CURRENT RESISTOR 2500 OHM
- C1-C2 ANTENNA SERIES CONDENSER .0005
- C3-C4-C5-C6 VARIABLE TUNING COND .0035
- C-7 GRID CONDENSER .0005
- C8 REGENERATION FEED CONDENSER .002
- C9 DETECTOR PLATE R.F. BY-PASS COND. .0005
- C10 DETECTOR PLATE A.F. BY-PASS COND. 1.5 MFD
- C11 200 BIAS BY-PASS COND. 30 MFD
- C12 200 BIAS BY-PASS CONDENSER 15 MFD
- C13 FILTER CONDENSER 2.0 MFD
- C14 FILTER CONDENSER 1.0 MFD
- C15 FILTER CONDENSER 1.0 MFD
- C16 250 BIAS BY-PASS CONDENSER 3.0 MFD
- J1 J2 J3 ANTENNA JACKS
- SW-1 REGENERATION SWITCH
- SW-2 PHONO-RADIO SWITCH
- SW-3 ON-OFF SWITCH
- SW-4 LINE RECEPTACLE (MALE)

Also Model Splitdorf M-5

MODELS R4, R5, C4
Receiver Chassis Wiring

THOMAS A. EDISON, INC.

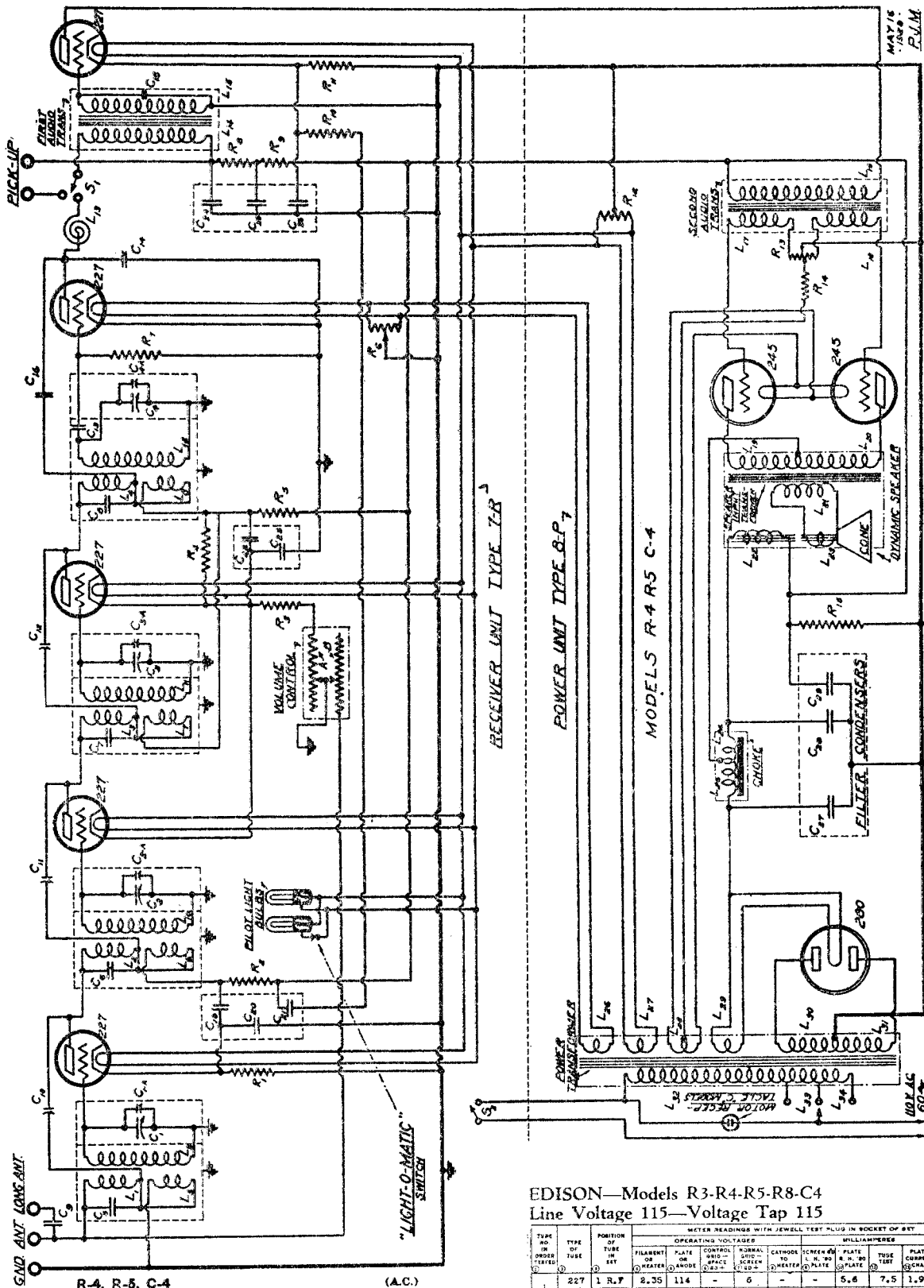


J.F.M. 8-29-29

MODELS R 4-R 5 C-4
RECEIVER UNIT
TYPE - 7R

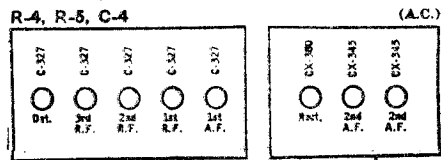
THOMAS A. EDISON, INC.

MODELS R4, R5, C4
Schematic



EDISON—Models R3-R4-R5-R8-C4
Line Voltage 115—Voltage Tap 115

TUBE NO. OR ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES					MILLIAMPERES		
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID	SCREEN GRID	CATHODE TO HEATER	SCREEN GRID TO PLATE	TUBE TEST	PLATE CURRENT (CHARM)
1	227	1 R.F.	2.35	114	-	6	-	5.6	7.5	1.9
2	227	2 R.F.	2.35	114	-	6	-	5.6	9.5	3.9
3	227	3 R.F.	2.35	114	-	6	-	5.6	9.5	3.9
4	327	Det.	2.35	88	-	-	-	2.0	2.0	0
5	227	1 A.F.	2.35	110	-	6.5	-	5.7	6.0	1.3
6	245	PP-AP	2.4	250	-	46	-	27.5	32	4.5
7	245	PP-AP	2.4	250	-	46	-	27.5	32	4.5
8	200	Rect.	4.9	-	-	-	50.4	50.4	-	-



MODELS R4, R5, C4
Parts List

THOMAS A. EDISON, INC.

IDENTIFICATION OF PARTS (Continued)

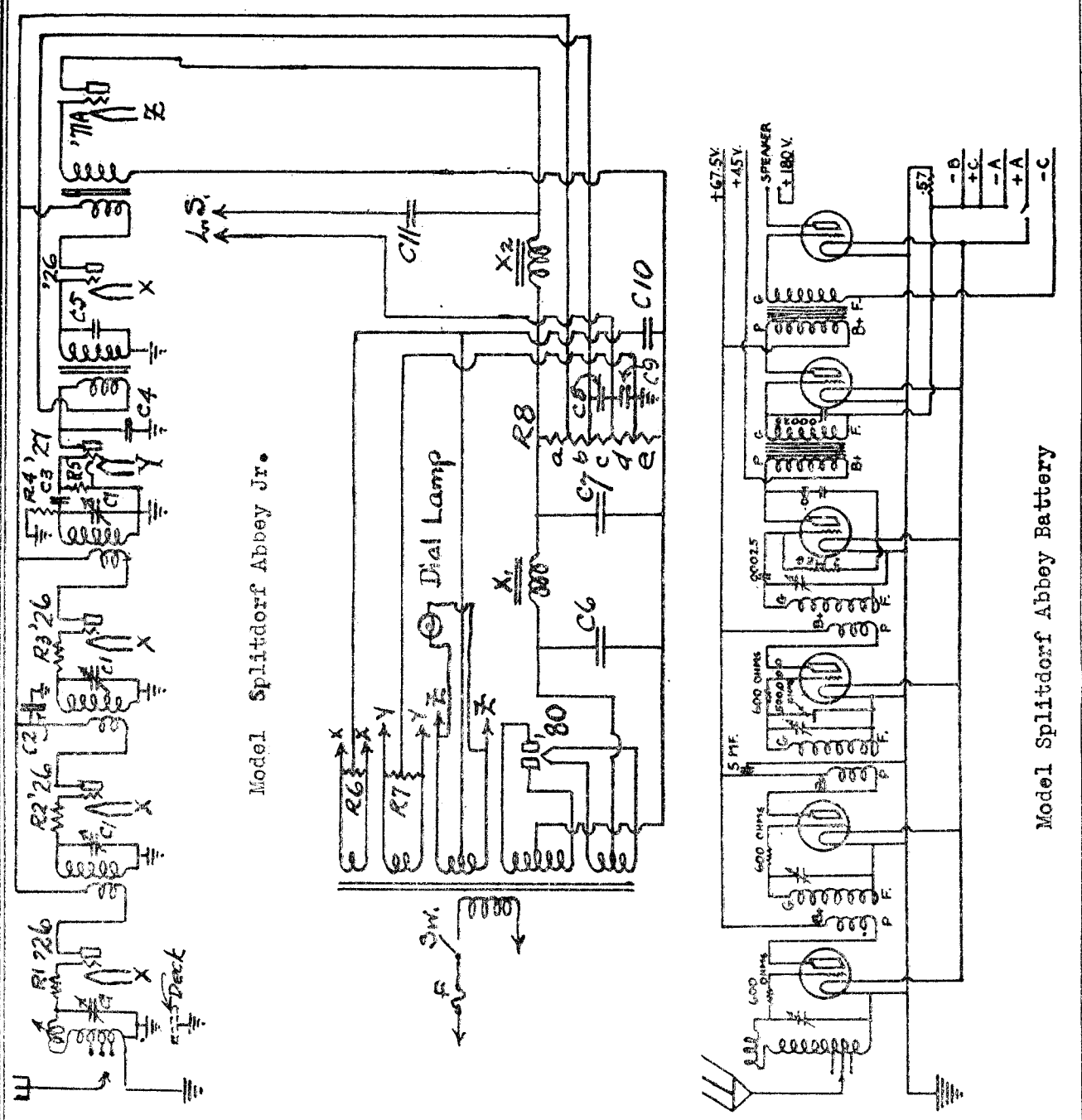
NO.	NAME AND FUNCTION	ELECTRICAL VALUE	
R-10	Hum balance resistor (1st a. f.)	6,000 ohm resistance, 1 watt.	
R-11	Bias resistor, 1st a. f. stage.	2,000 ohm resistance, 1 watt.	
R-12	R. f. and a. f. heater center tapped resistor.	20 ohm fixed center-tapped resistance.	
R-13	Push-pull balancing resistor.	200 ohm center-tapped potentiometer.	
R-14	Bias resistor, 2nd a. f. stage.	780 ohm, 5 watt resistance.	
R-15	Power supply loss current resistor.	10,000 ohm, 5 watt resistance.	
L-1	Long wave primary, 1st r. f. transformer.	Each a 500 microhenry coil.	
L-2	Long wave primary, 2nd r. f. transformer.		
L-3	Long wave primary, 3rd r. f. transformer.		
L-4	Long wave primary, detector input transformer.		
L-5	Short wave primary, 1st r. f. transformer.	Each a 7 1/2 turn coil.	
L-6	Short wave primary, 2nd r. f. transformer.		
L-7	Short wave primary, 3rd r. f. transformer.		
L-8	Short wave primary, detector input transformer.		
L-9	Secondary, 1st r. f. transformer.	Each a 245 microhenry coil, (measured in shield).	
L-10	Secondary, 2nd r. f. transformer.		
L-11	Secondary, 3rd r. f. transformer.		
L-12	Secondary, detector input transformer.		
L-13	Detector plate r. f. choke.	50 to 65 millihenry choke.	
L-14	Primary, 1st a. f. transformer.	4:1 ratio a. f. transformer.	
L-15	Secondary, 1st a. f. transformer.		
L-16	Primary, 2nd a. f. transformer.	5:1 ratio a. f. transformer with separate secondaries connected in series by variable resistor.	
L-17	Secondary, 2nd a. f. transformer.		
L-18	Secondary, and a. f. transformer.	and a. f. R-13.	
L-19	Half primary, speaker input transformer.	Speaker input transformer, mounted in speaker frame, utilizing center tapped primary.	
L-20	Half primary, speaker input transformer.		
L-21	Secondary, speaker input transformer.	4,500 ohm field coil.	
L-22	Field coil, dynamic speaker.		
L-23	Voice coil, dynamic speaker.	20 henry, 375 ohm choke.	
L-24	Inside third of filter choke.		
L-25	Outside two-thirds of filter choke.	Power transformer.	
L-26	Detector heater secondary winding.		
L-27	R. f. and a. f. heater secondary winding.	Power transformer.	
L-28	2nd a. f. fil. secondary winding.		
L-29	Rectifier fil. secondary winding.		
L-30	Half high voltage secondary winding.		
L-31	Half high voltage secondary winding.		
L-32	Low line voltage primary winding.		
L-33	Additional section of primary winding for medium voltage.		
L-34	Additional section of primary winding for high line voltage.		
S-1	Radio-phonograph switch.		S. P. D. T. toggle switch, operated by volume control shaft.
S-2	Line switch.		S. P. S. T. toggle switch.
	Light-O-Matic Switch.	Located in dial mechanism, operating Light-O-Matic pilot light.	
	Motor: Receptacle (Brown).	This plug provides 110 volts A. C. for operation of phonograph motor in radio phonograph combination model.	
	Volume Control	{ A—Wire wound, 5,000 ohms. B—Graphite, 10,000 ohms.	

IDENTIFICATION OF PARTS

TO ACCOMPANY PLATE No. 1-A
'LIGHT-O-MATIC' MODELS R-4, R-5 and C-4

NO.	NAME AND FUNCTION	ELECTRICAL VALUE
C-1	Tuning condenser, 1st r. f. stage.	{ 2-gang variable condenser, maximum capacity, each section 355 mfd.
C-2	Tuning condenser, 2nd r. f. stage.	
C-3	Tuning condenser, 3rd r. f. stage.	{ 2-gang variable condenser, maximum capacity, each section 355 mfd.
C-4	Tuning condenser, detector stage.	
C-5	Each a fixed condenser tuning the long wave primary circuit of the associated transformer to approximately 450 kilocycles.	{ Each a .00025 mfd. fixed moulded mica condenser.
C-6		
C-7		{ .000125 mfd. fixed moulded mica condenser.
C-8		
C-9	Long antenna series condenser.	{ Each an adjustable condenser, 40 to 80 mfd.
C-10	Neutralizing condensers, 1st, 2nd and 3rd r. f. stages, respectively.	
C-11		{ .0001 mfd. fixed moulded mica condenser.
C-12		
C-13	Detector grid condenser.	{ .001 mfd. fixed moulded mica condenser.
C-14	Detector plate condenser.	
C-15	High frequency cut-off condenser.	{ .00045 mfd. fixed moulded mica condenser.
C-16	Detector Neutralizing Condenser	
C-19	Plate by-pass condenser, 1st r. f. stage.	{ .1 mfd. 300v. paper condenser.
C-20	Bias by-pass condenser, 1st r. f. stage.	
C-21	Hum balance condenser (1st a. f.)	{ .16 mfd. 300v. paper condenser. (C-19, 20 and 21 in same can.)
C-22	Plate by-pass condenser, 2nd and 3rd r. f.	{ 1 mfd. 300v. paper condenser.
C-23	Bias by-pass condenser, 2nd and 3rd r. f.	
C-24	A. f. by-pass condenser, detector plate.	{ 1 mfd. 150v. paper condenser. (C-22 and 23 in same can.)
C-25	Filter condenser, detector plate supply.	
C-26	Bias by-pass condenser, 1st a. f. stage.	{ 1 mfd. 300v. paper condenser. 5 mfd. 300v. paper condenser. 1 mfd. 150v. paper condenser. (C-24, 25 and 26 in same can.)
C-27	1st filter condenser.	{ 2 mfd. 600v. paper condenser.
C-28	2nd filter condenser.	
C-29	3rd filter condenser.	{ 2 mfd. 600v. paper condenser. 1 mfd. 300v. paper condenser. (C-27, 28 and 29 in same can.)
C-3A	Tuning compensator, 1st r. f.	{ Each an adjustable air and mica dielectric condenser, mounted on side of variable condenser section which it shunts.
C-3A	Tuning compensator, 2nd r. f.	
C-3A	Tuning compensator, 3rd r. f.	
C-4A	Tuning compensator, detector.	
R-1	Bias resistor, 1st r. f. stage.	1,000 ohm resistance, 1 watt.
R-2	Isolating resistor, 1st r. f.	1,000 ohm resistance, 1 watt.
R-3	Minimum bias resistor, 2nd and 3rd r. f.	400 ohm resistance, 1 watt.
R-4	Bleeder resistor.	40,000 ohm resistance, 1 watt.
R-5	Isolating resistor, 2nd and 3rd r. f.	400 ohm resistance, 1 watt.
R-6	Detector heater hum adjuster.	20 ohm potentiometer.
R-7	Detector grid leak.	1.5 megohm resistance, 1 watt.
R-8	2nd section detector filter resistor.	25,000 ohm resistance, 1 watt.
R-9	1st section detector filter resistor.	25,000 ohm resistance, 1 watt.

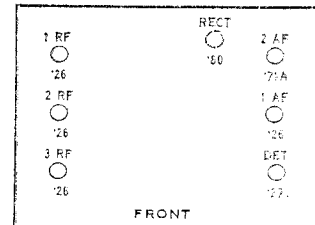
THOMAS A. EDISON, INC. MODEL Splitdorf Abbey Jr.
MODEL Splitdorf Abbey Bat
Schematic



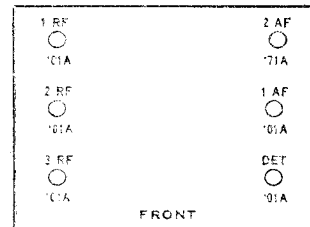
Model Splitdorf Abbey Jr.

Model Splitdorf Abbey Battery

Model Splitdorf Abbey Jr.

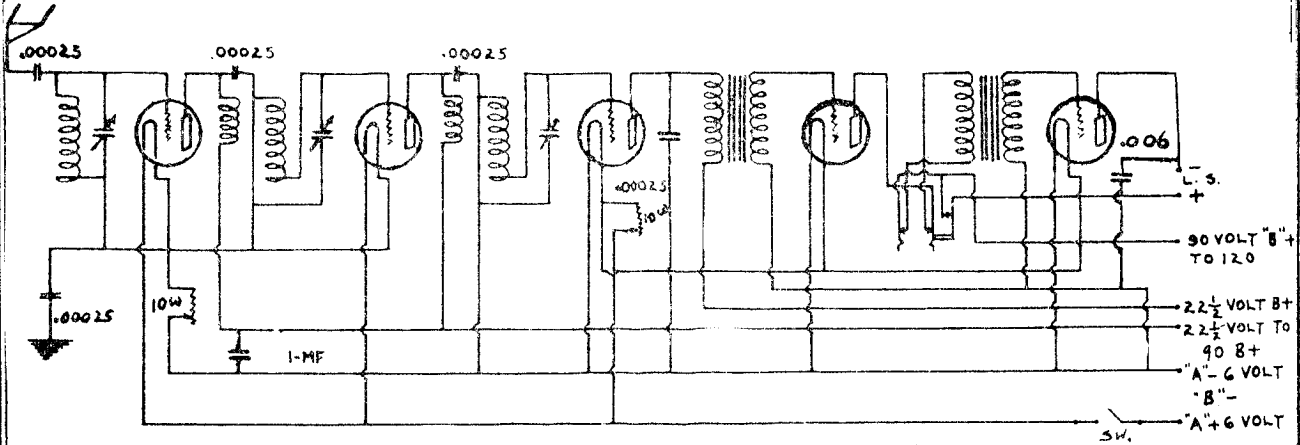


Model Splitdorf Abbey—Battery

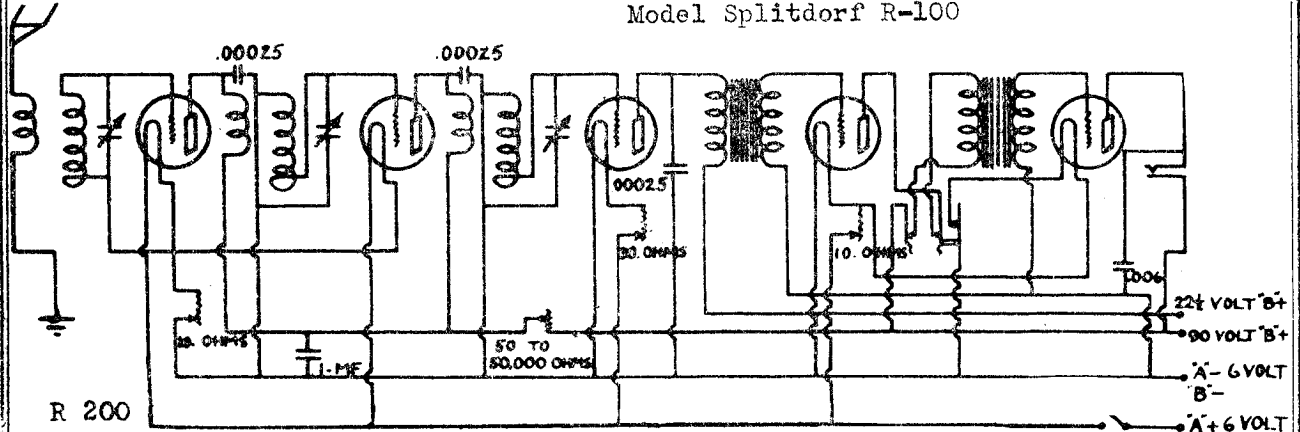


MODEL Splitdorf R-100
 MODEL Splitdorf R-200
 MODEL Splitdorf RV-695
 Schematic

THOMAS A. EDISON, INC.



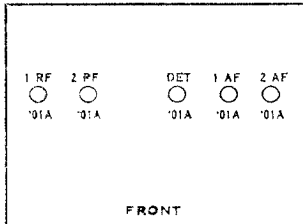
Model Splitdorf R-100



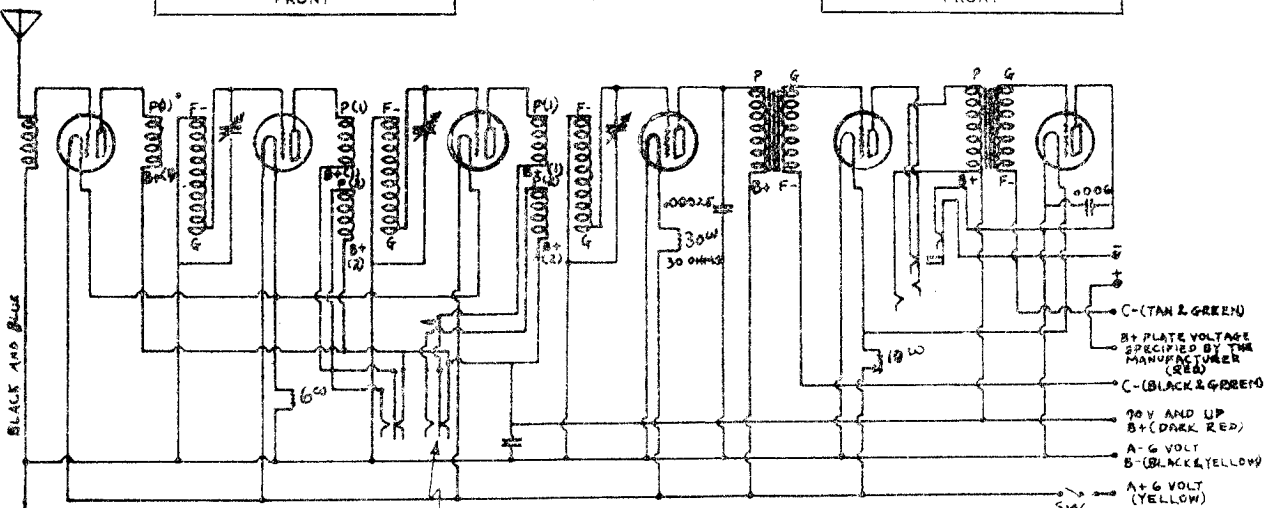
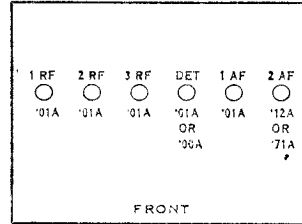
R 200

Model Splitdorf R-200

Models Splitdorf R100, R200,



Model Splitdorf RV695

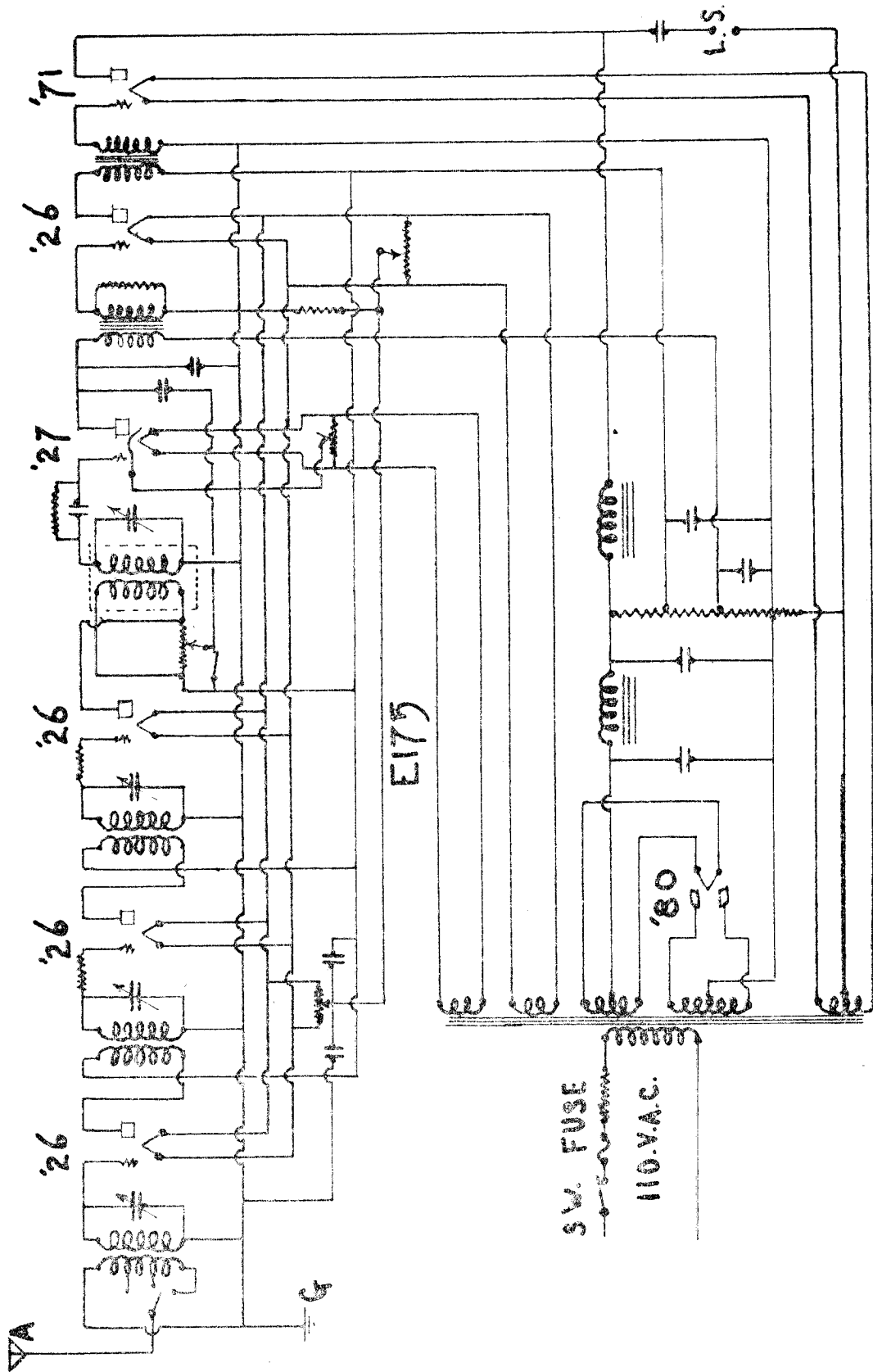


Model Splitdorf RV-695

3 LOWER BLADES IN JACK SWITCH

MODEL Splitdorf E-175
Schematic

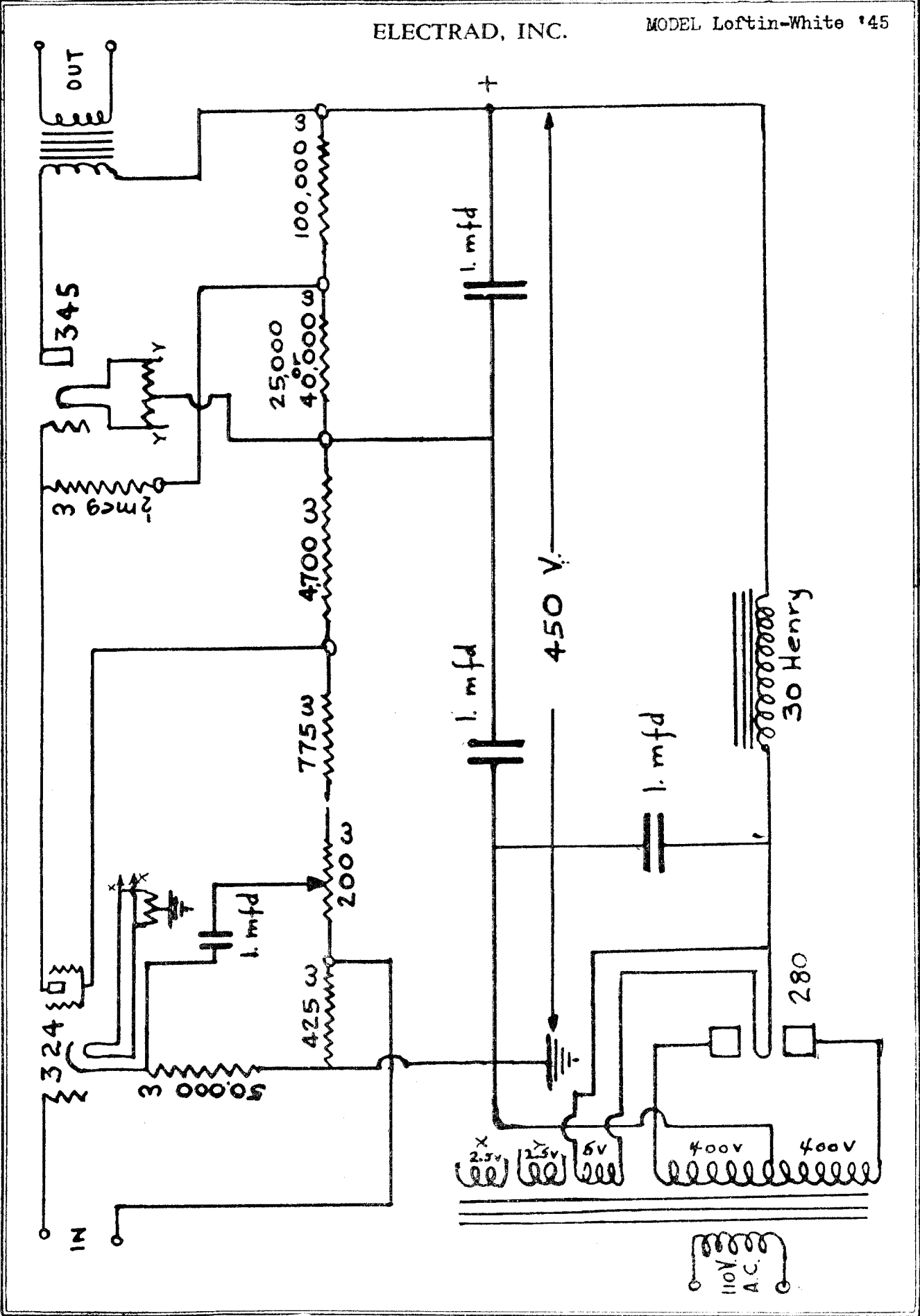
THOMAS A. EDISON, INC.



Model Splitdorf E-175

ELECTRAD, INC.

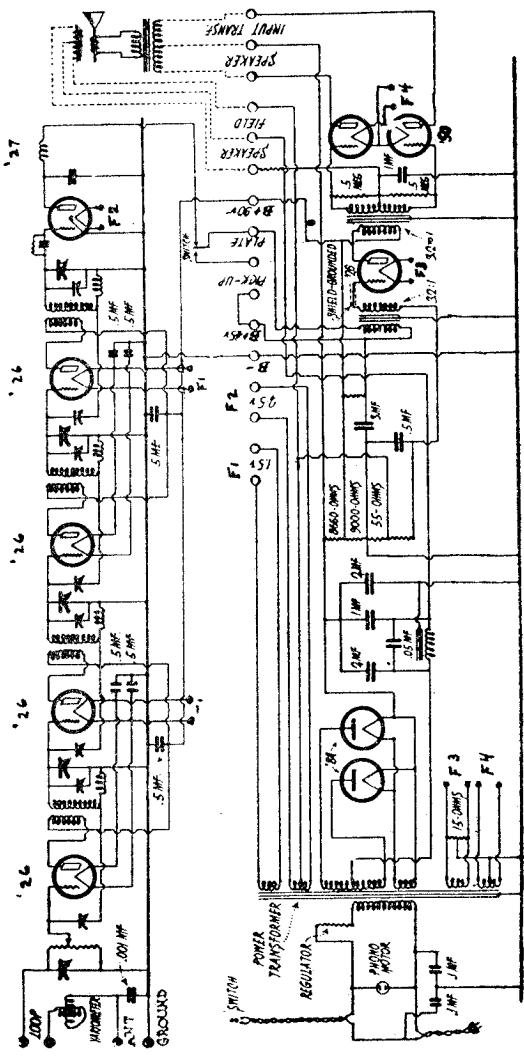
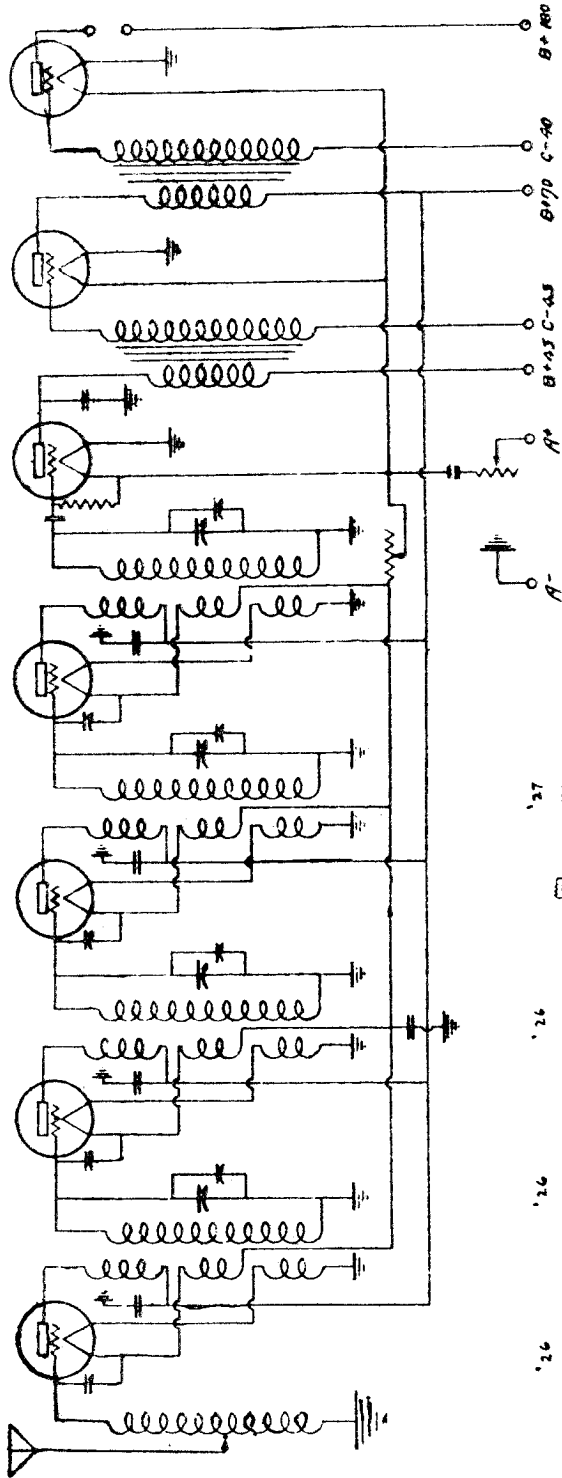
MODEL Loftin-White '45



ELECTRICAL
RESEARCH LABORATORIES, Inc.

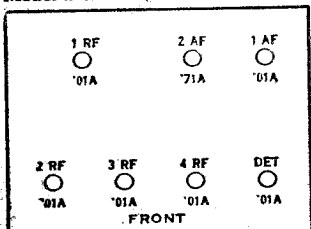
MODEL S-61
MODEL R-1
Schematic

ERLA S-61 RFL SET RADIO RECEIVER
CIRCUIT

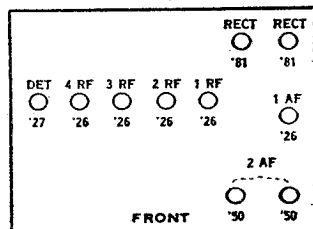


ERLA Model R-1 and Model A Power Unit

Model Erla S61 (1927)

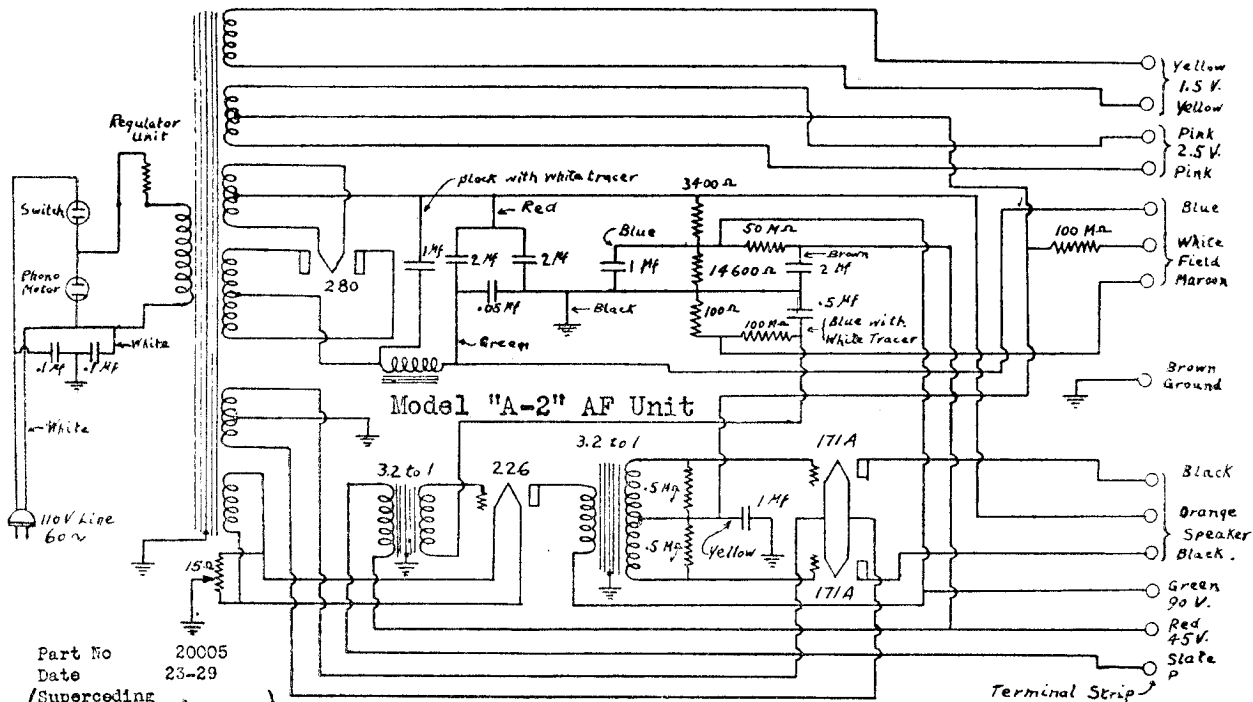
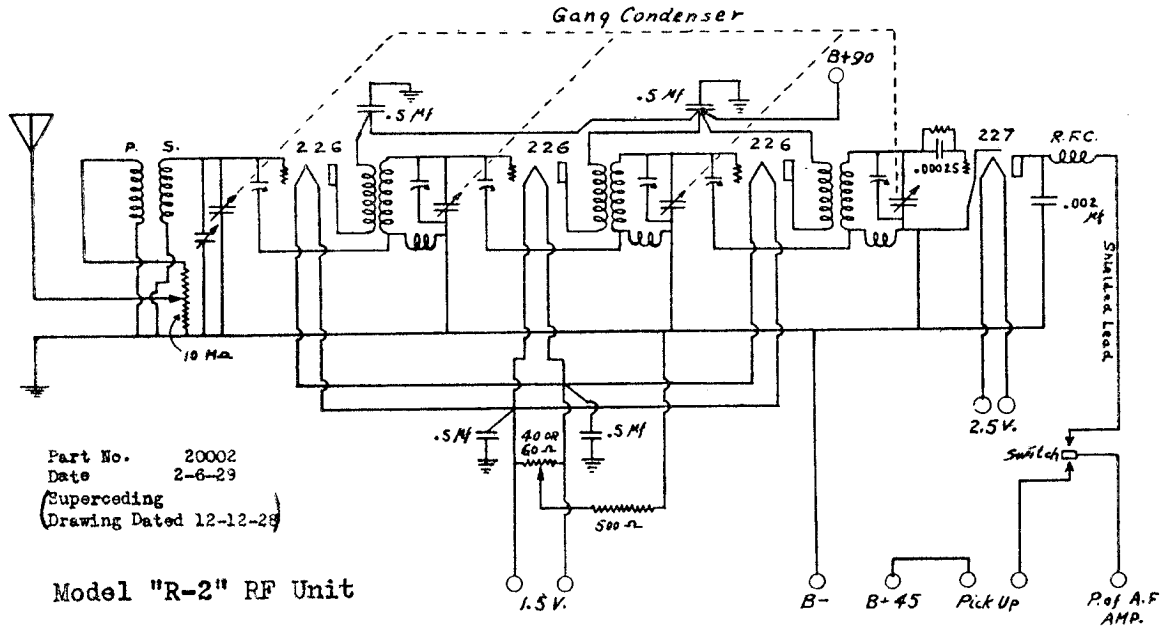


Model Erla R1-A (1928)

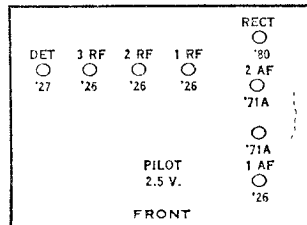
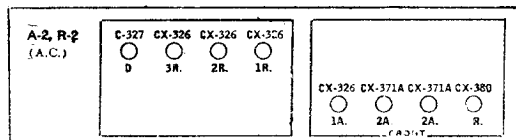


MODEL RF Unit
MODEL AF Unit
Schematic

ELECTRICAL
RESEARCH LABORATORIES, Inc.

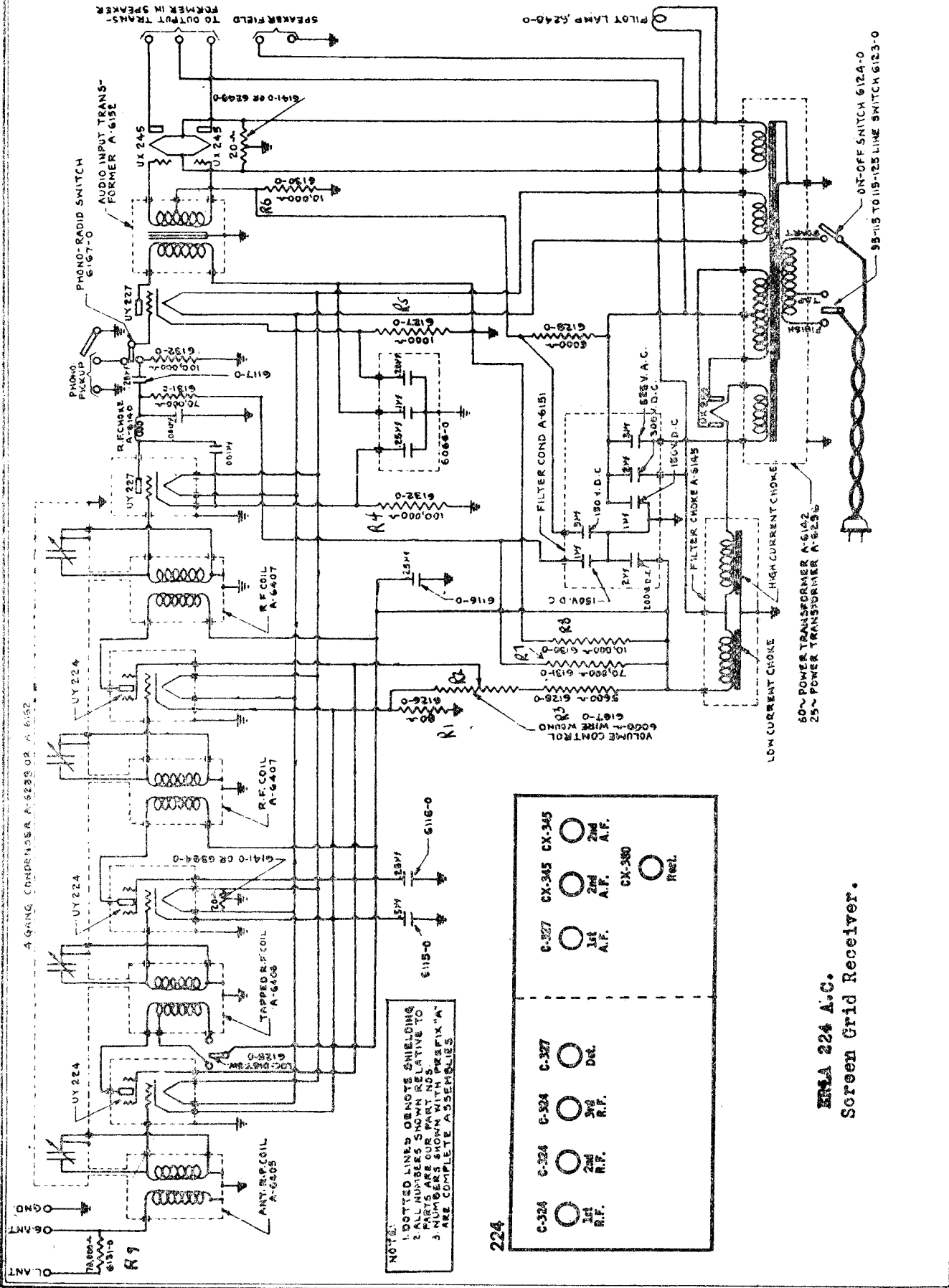


ERLA MODEL "A2" A.F. AMPLIFIER Model Erla R2-A2 (1929)



ELECTRICAL
RESEARCH LABORATORIES, Inc.

MODEL 224 AC
Schematic



NOTES:
1. DOTTED LINES DENOTE SHIELDING
2. ALL NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NOS.
3. PARTS ARE SHOWN IN PREFIX "A" ARE COMPLETE ASSEMBLIES

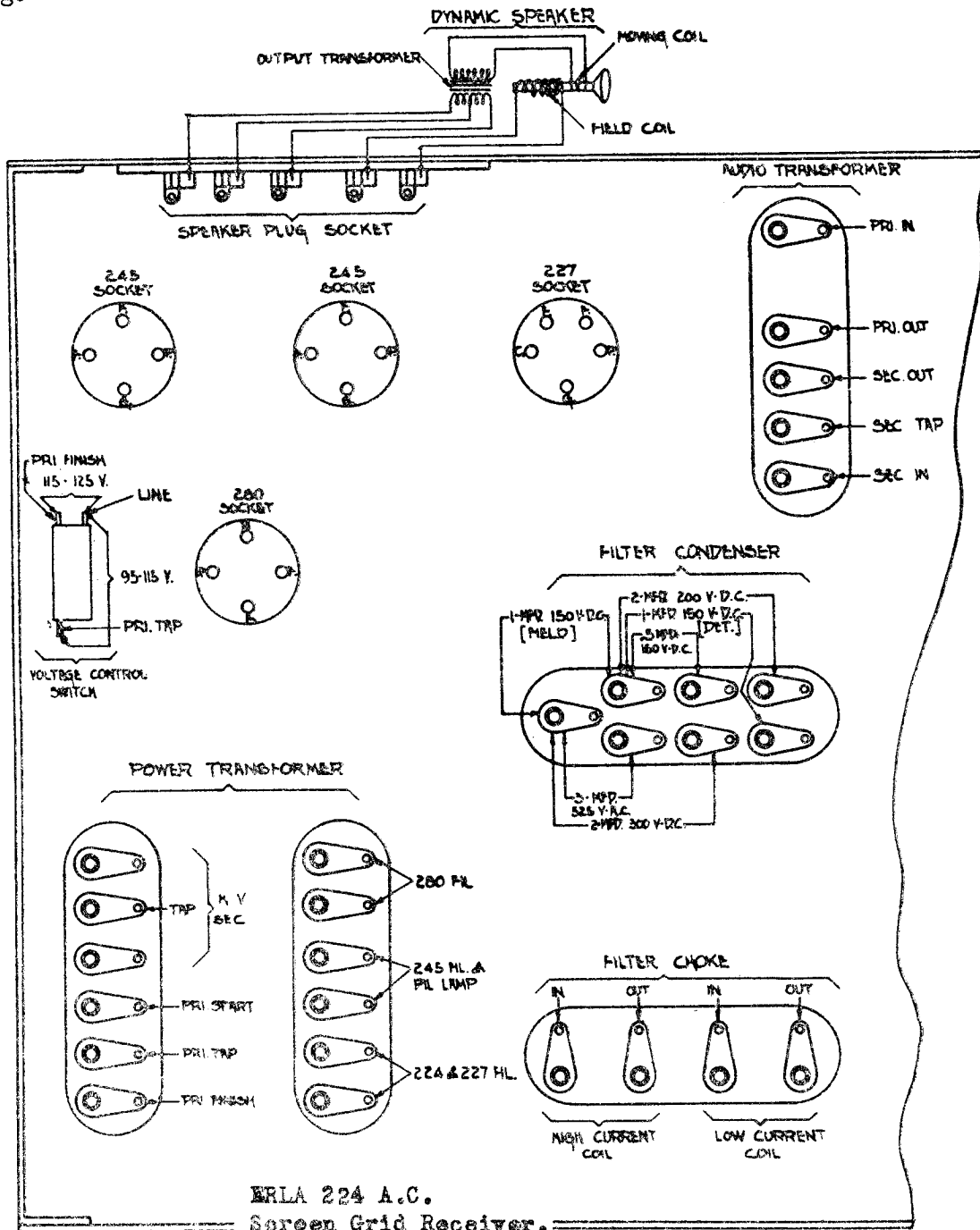
224

C-324	C-324	C-324	C-324	C-324	C-345	CX-345	CX-345
1st R.F.	2nd R.F.	3rd R.F.	1st A.F.	2nd A.F.	1st A.F.	2nd A.F.	Reel.
C-327	C-327	C-327	C-327	C-327	C-380	CX-380	Reel.
1st A.F.	Det.	1st A.F.	2nd A.F.	2nd A.F.			

ERLA 224 A.C.
Screen Grid Receiver.

MODEL 224 AC
Chassis
Voltage

ELECTRICAL
RESEARCH LABORATORIES, Inc.



ERLA 224 A.C.
Screen Grid Receiver.

Details of Power Supply Terminal Connections

Tube	Fil.	Screen Grid to cathode	Plate to cathode	Ground to cathode	Grid to Filament
280	4.8 to 5v AC		340 to 360v DC		
245	2.4 to 2.5v AC		240 to 250v DC		
Audio 227	2.35 to 2.4v AC		90 to 100v DC	4.5v DC	
DET. 227	2.35 to 2.4v AC		60 to 75v DC	6 to 7.5v DC	45 to 50v DC
224	2.35 to 2.4v AC	75 to 80v DC	160 to 170v DC	1.5 to 2v DC	

(The above are based on line voltage of 110 volts and the switch in the 95-115 position.)

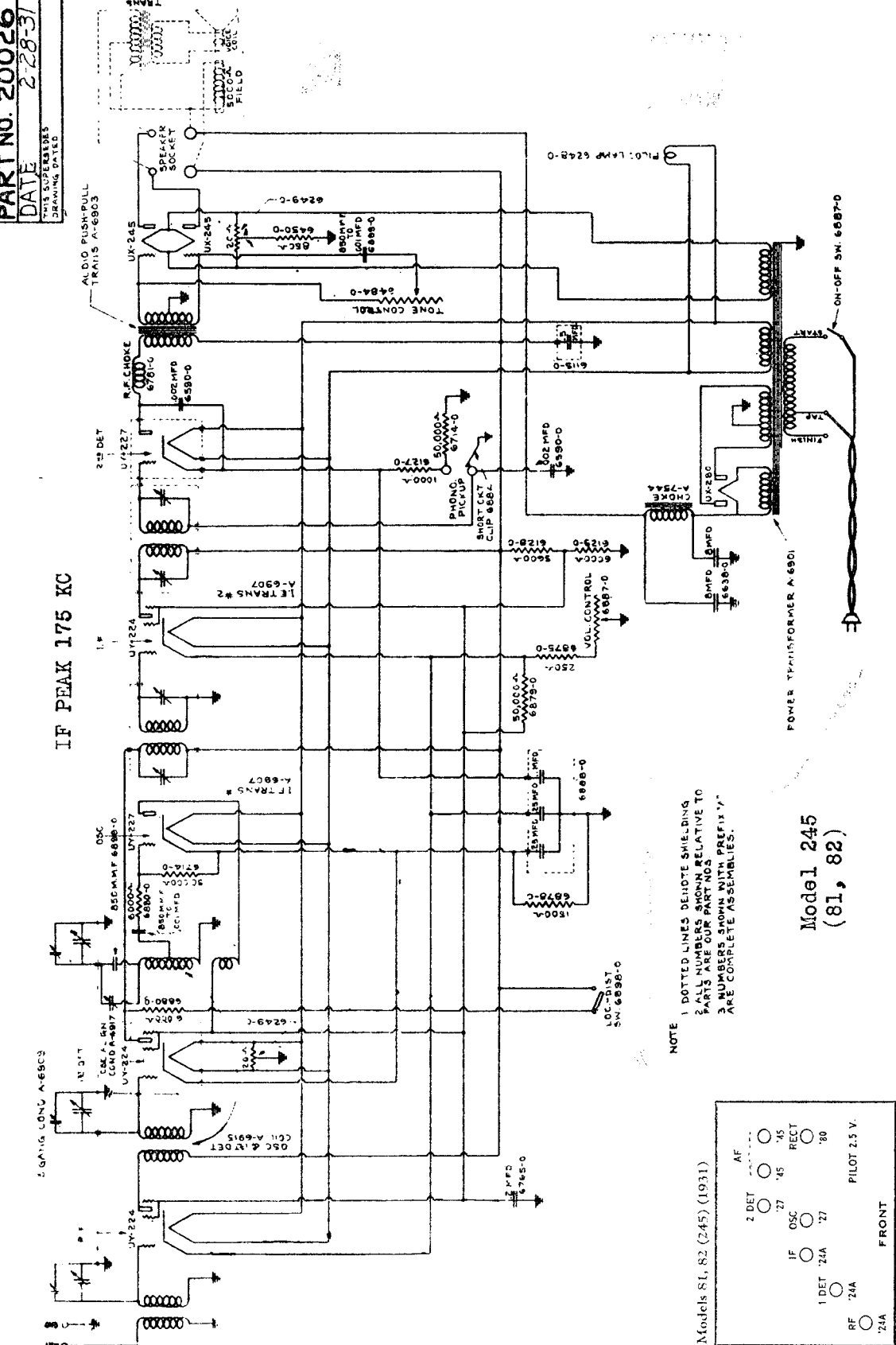
(Volume control set to full volume position.)

ELECTRICAL RESEARCH LABORATORIES, Inc.

MODEL 81, 82 (245) Schematic

PART NO. 20026 DATE 2-28-37 THIS SUPERSEDES DRAWING DATED

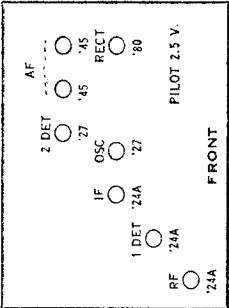
IF PEAK 175 KC



NOTE 1. DOTTED LINES DENOTE SHIELDING 2. PIN NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NOS. 3. NUMBERS SHOWN WITH PREFIX 'V' ARE COMPLETE ASSEMBLIES.

Model 245 (81, 82)

Models 81, 82 (245) (1931)



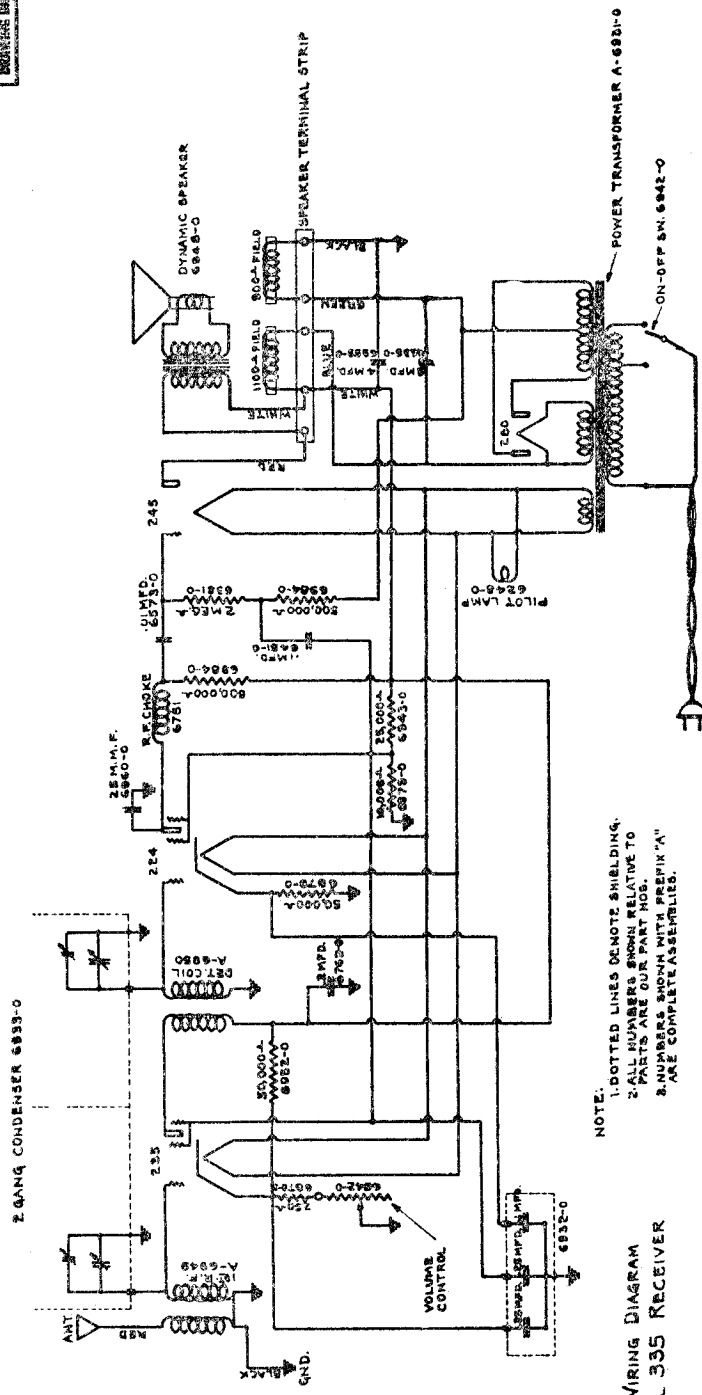
ELECTRICAL RESEARCH LABORATORIES, Inc.

MODEL 335
Schematic

PART NO. 20027
DATE 4-8-31
THIS SURVEILS BOARDING DATED

NAME-

CHANGERS DATE



NOTE:
1. DOTTED LINES DENOTE SHIELDING.
2. ALL NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NOS.
3. NUMBERS SHOWN WITH PREFIX "A" ARE COMPLETE ASSEMBLIES.

**WIRING DIAGRAM
MODEL 335 RECEIVER**

<p>IF TRANS. <input type="radio"/> '27 <input type="radio"/> '45</p> <p>IF TRANS. <input type="radio"/> '24 <input type="radio"/> '27 <input type="radio"/> '80</p> <p><input type="radio"/> '24 <input type="radio"/> '24 <input type="radio"/> '24 <input type="radio"/> '27</p> <p><input type="radio"/> 1RF <input type="radio"/> 2RF <input type="radio"/> 3RF <input type="radio"/> DET</p>	<p><input type="radio"/> 1AF <input type="radio"/> 2AF <input type="radio"/> RECT</p> <p>271 271-A</p> <p><input type="radio"/> '24 <input type="radio"/> '45 <input type="radio"/> '80</p> <p><input type="radio"/> 2AF <input type="radio"/> RECT</p>
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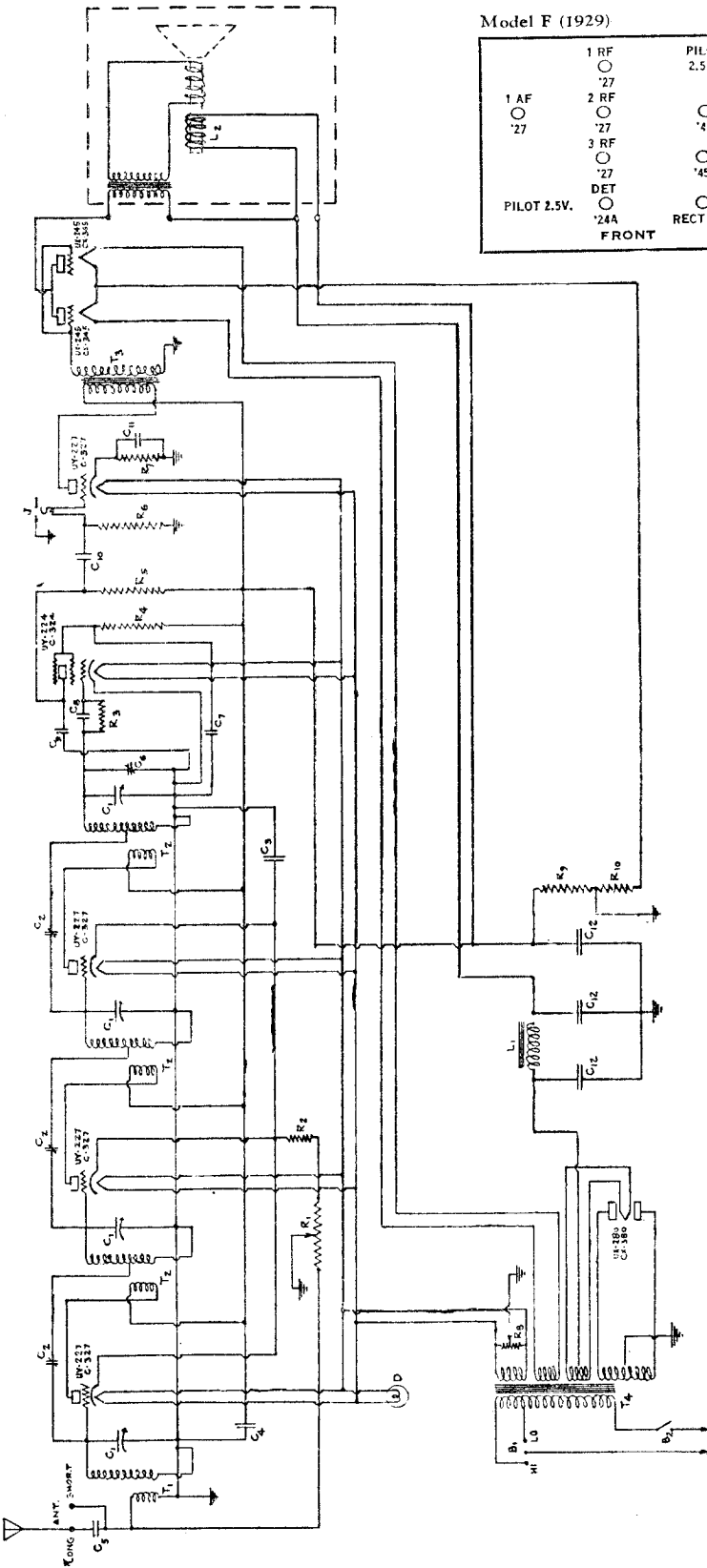
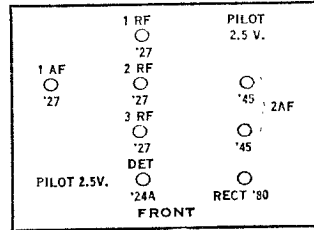
DO NOT SCALE THIS DRAWING WORK TO DIMENSIONS SHOWN

ERLA	
ELECTRICAL RESEARCH LABORATORIES, INC. CHICAGO	
MATERIAL USED ON	REVISIONS
SCALE	DRAWN BY
DIMENSION TOLERANCES	REQ'D.
PRACTICE: USE NAME & TYLE OF "A" PARTS ONLY. SMALL HOLES: USE NAME & TYLE OF "A" PARTS ONLY. PRACTICE: USE NAME & TYLE OF "A" PARTS ONLY. PRACTICE: USE NAME & TYLE OF "A" PARTS ONLY. PRACTICE: USE NAME & TYLE OF "A" PARTS ONLY.	

MODEL F
Schematic
Data

EMERSON RADIO AND PHONOGRAPH
CORPORATION

Model F (1929)



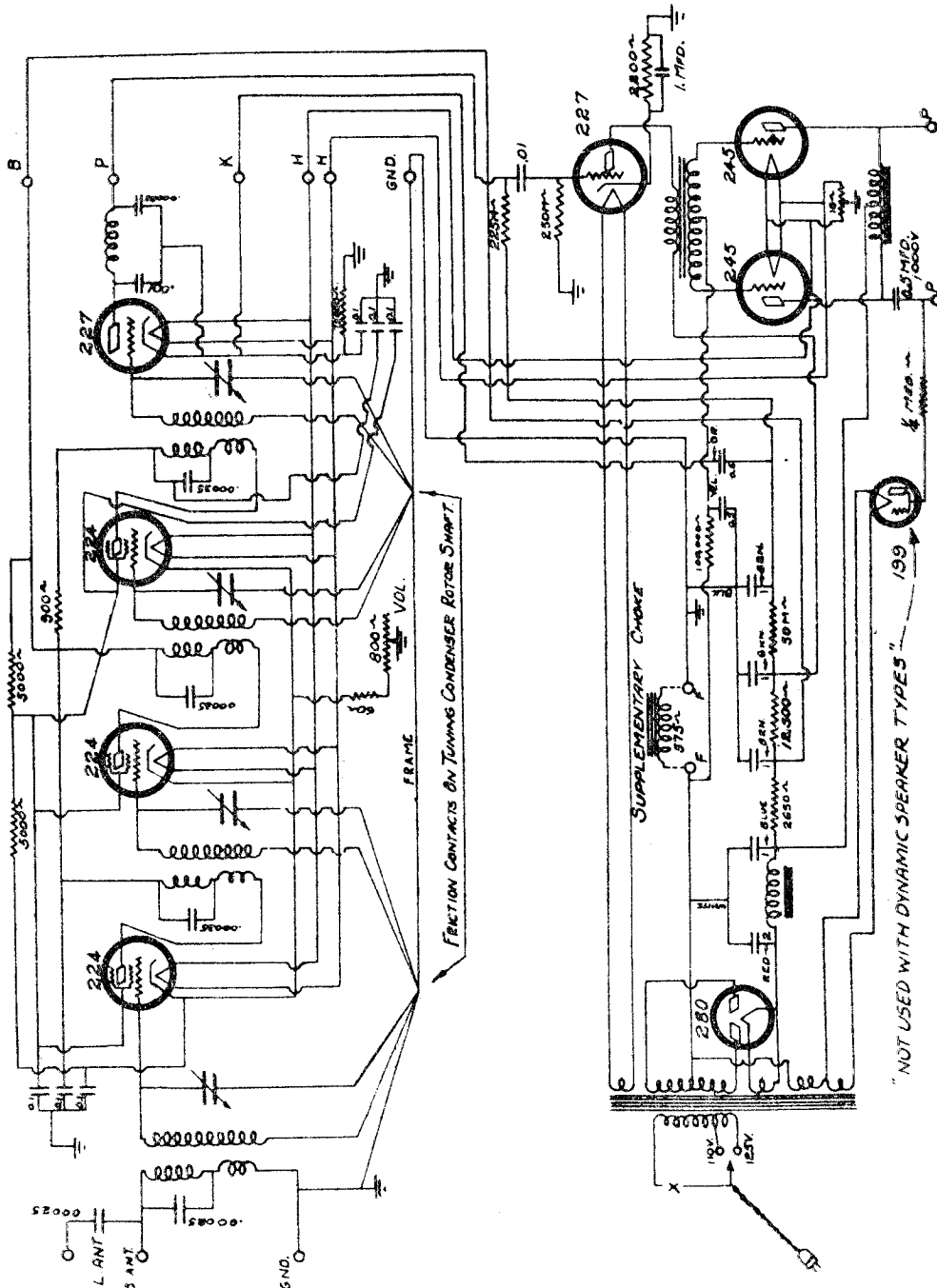
Model "F"
Line Voltage 115—Set on High Volt Tap—Volume
Control Position Full On *Last Stage Is 2 No. 245 in
Parallel

TYPE OF TUBE	POSITION IN SOCKET OF SET	TUBE OUT		TUBE IN TESTER		PLATE VOLTS	GRID VOLTS	FILAMENT VOLTS	FILAMENT CURRENT	W.A.	W.A. PER HOUR
		A	B	A	B						
247	1st AF	2.4	119	2.3	115	7	5.6	4.6	.8		
247	2nd AF	2.4	119	2.3	115	7	5.8	4.6	.8		
247	3rd AF	2.4	119	2.3	115	7	5.8	4.6	.8		
244	DET.	2.4	50	2.3	50	0.8	0.7	0.7	—	5.4	
245	1st A.	2.4	120	2.3	100	8.5	6.2	7.5	1.3		
245	2nd A.	2.4	250	2.4	175	51	24	28	4		
245	3rd A.	2.4	250	2.4	175	51	24	28	4		
290	RECT.	—	—	4.75	—	—	—	—	—	80	

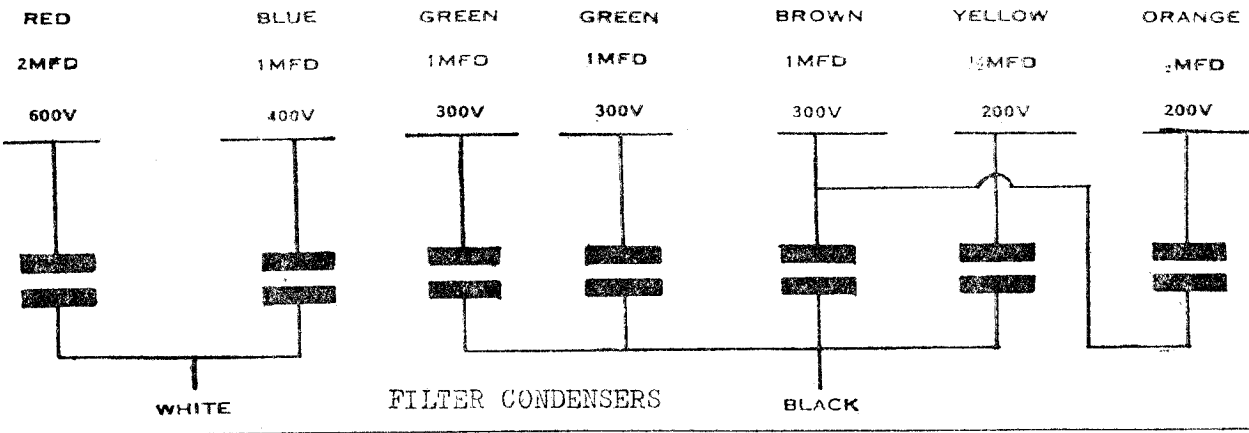
- C₁ Tuning Condenser.
- C₂ Neutralizing Condenser.
- C₃ R.F. Grid Bias Condenser .25 MF.
- C₄ R.F. Plate By-Pass Condenser .25 MF.
- C₅ Antenna Condenser .00025 MF.
- C₆ Det. Padding Condenser.
- C₇ Det. Screen Grid Bias Condenser .25 MF.
- C₈ Det. Control Grid Condenser .0001 MF.
- C₉ Det. Plate Condenser .0005 MF.
- C₁₀ 1st Audio Coupling Condenser 0.1 MF.
- C₁₁ 1st Audio Grid Condenser 0.5 MF.
- C₁₂ Filter Condensers 8.0 MF Each.
- L₁ Filter Choke.
- L₂ Speaker Field 2500 Ohms.
- J Phonograph Jack.
- D Dial Lamp.
- R₁ Volume Control 15,000 Ohms.
- R₂ R.F. Grid Bias Resistance 620 Ohms.
- R₃ Det. Control Grid Resistance .5 Megohm.
- R₄ Det. Screen Grid Resistance 5 Megohm.
- R₅ 1st Audio Coupling Resistance .1 Megohm.
- R₆ 1st Audio Grid Resistance .5 Megohm.
- R₇ 1st Audio Grid Bias Resistance 1750 Ohms.
- R₈ Hum Control 20 Ohms.
- R₉ Loss Current Resistance 4500 Ohms.
- R₁₀ 245 Grid Bias Resistance 650 Ohms.
- T₁ Antenna Transformer.
- T₂ R.F. Inter stage Transformer.
- T₃ Input Audio Transformer.
- T₄ Power Transformer.
- B₁ Hi-Lo S.P.D.T. Toggle Switch.
- B₂ S.P.S.T. Toggle Switch.

MODEL 65
Schematic

EMERSON RADIO AND PHONOGRAPH
CORPORATION

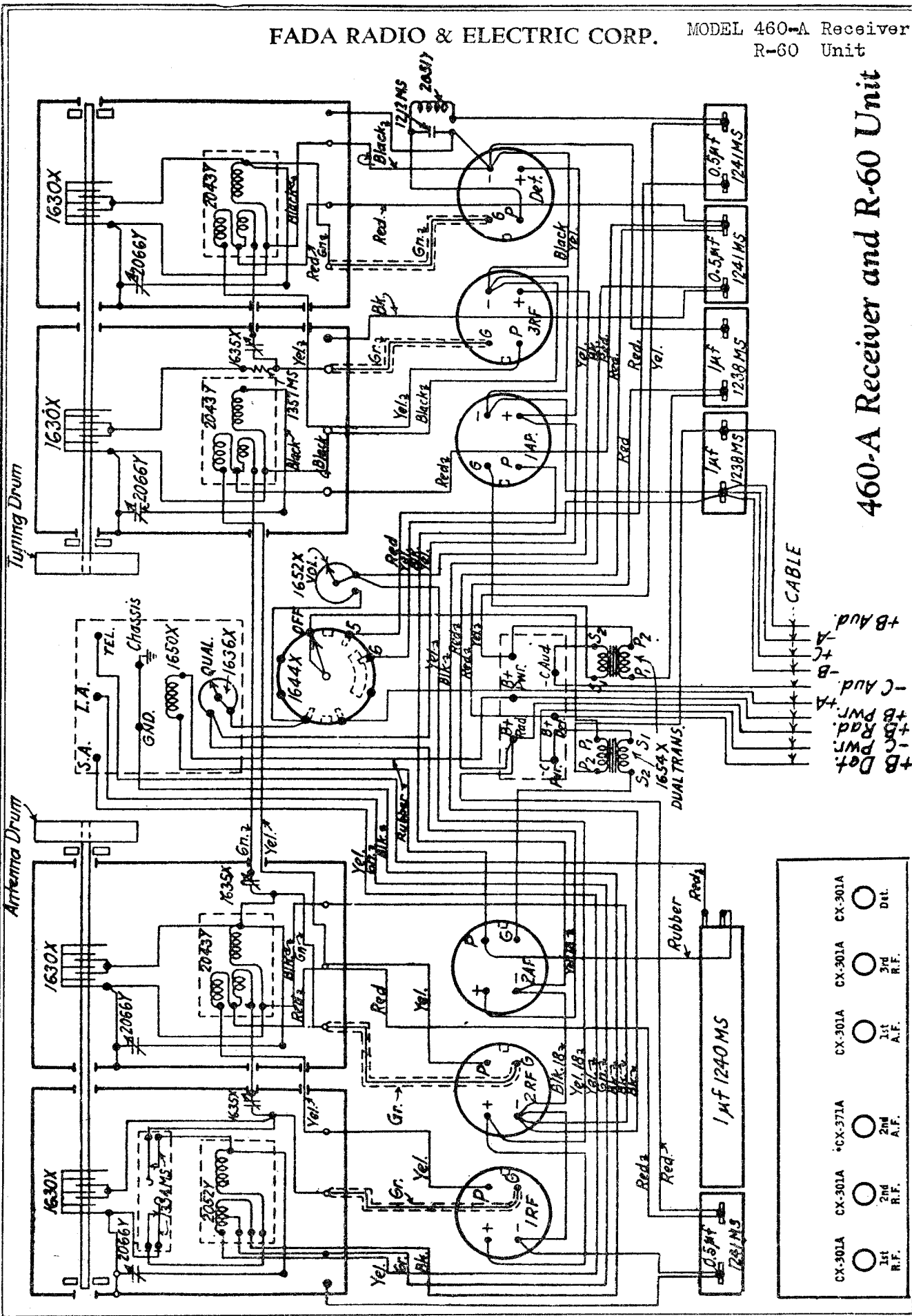


Voltage Data On Next Page



FADA RADIO & ELECTRIC CORP.

MODEL 460-A Receiver
R-60 Unit



460-A Receiver and R-60 Unit

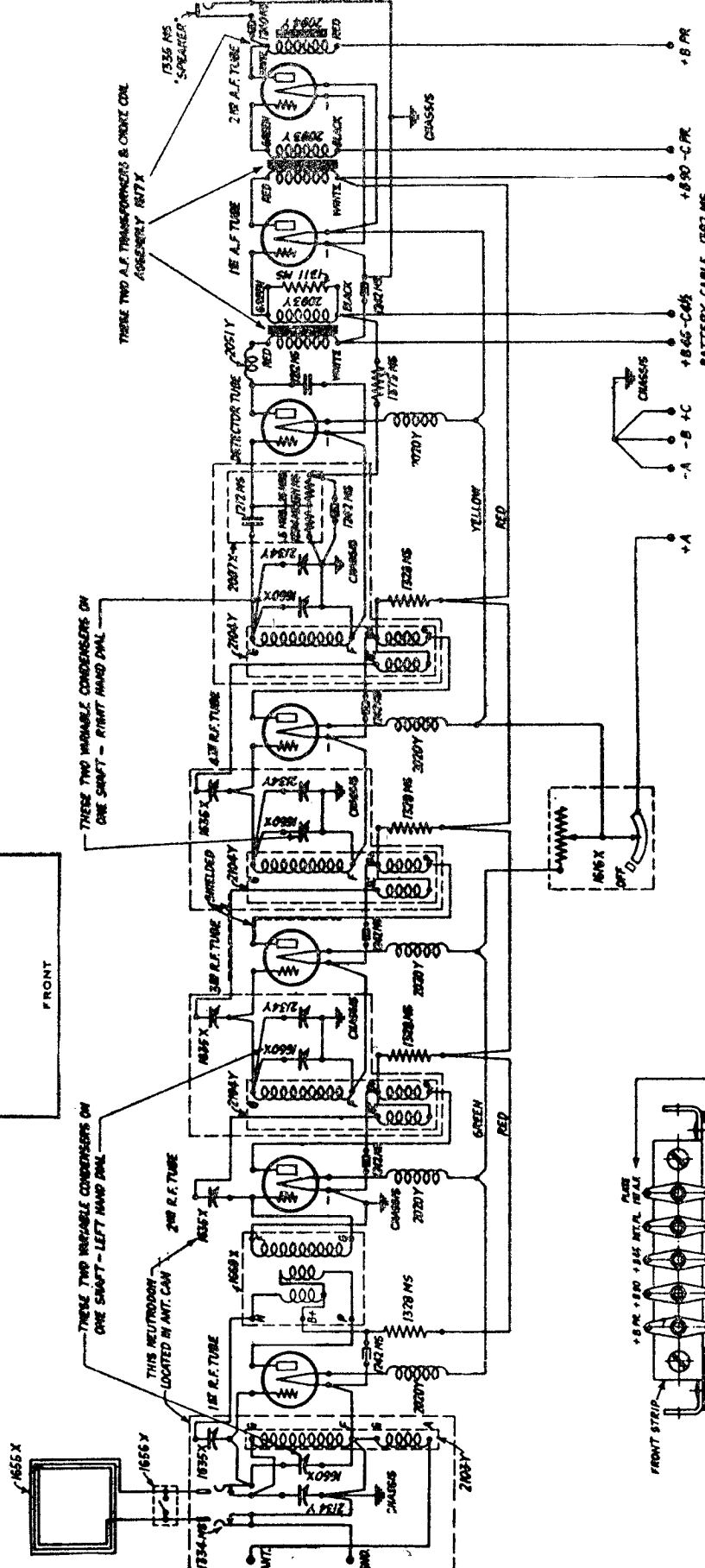
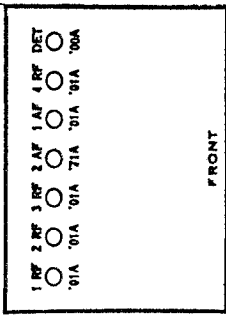
CX-301A	CX-301A	*CX-371A	CX-301A	CX-301A	CX-301A
1st R.F.	2nd R.F.	2nd A.F.	1st A.F.	3rd R.F.	Det.

+B Aud.
 -C Aud.
 +B P.W.R.
 -C P.W.R.
 +B Det.
 -C Det.

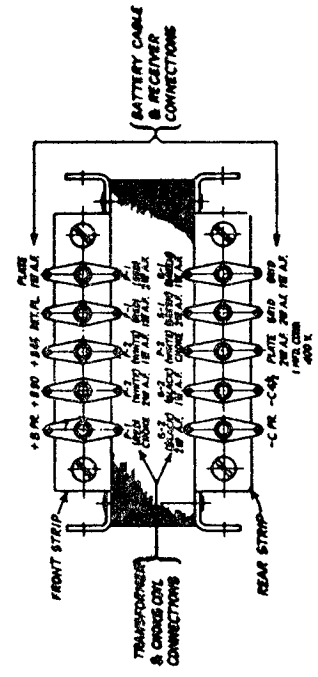
MODEL 475-A
SF 45/75
Schematic

FADA RADIO & ELECTRIC CORP

Models Fada's 475A, 45-75A



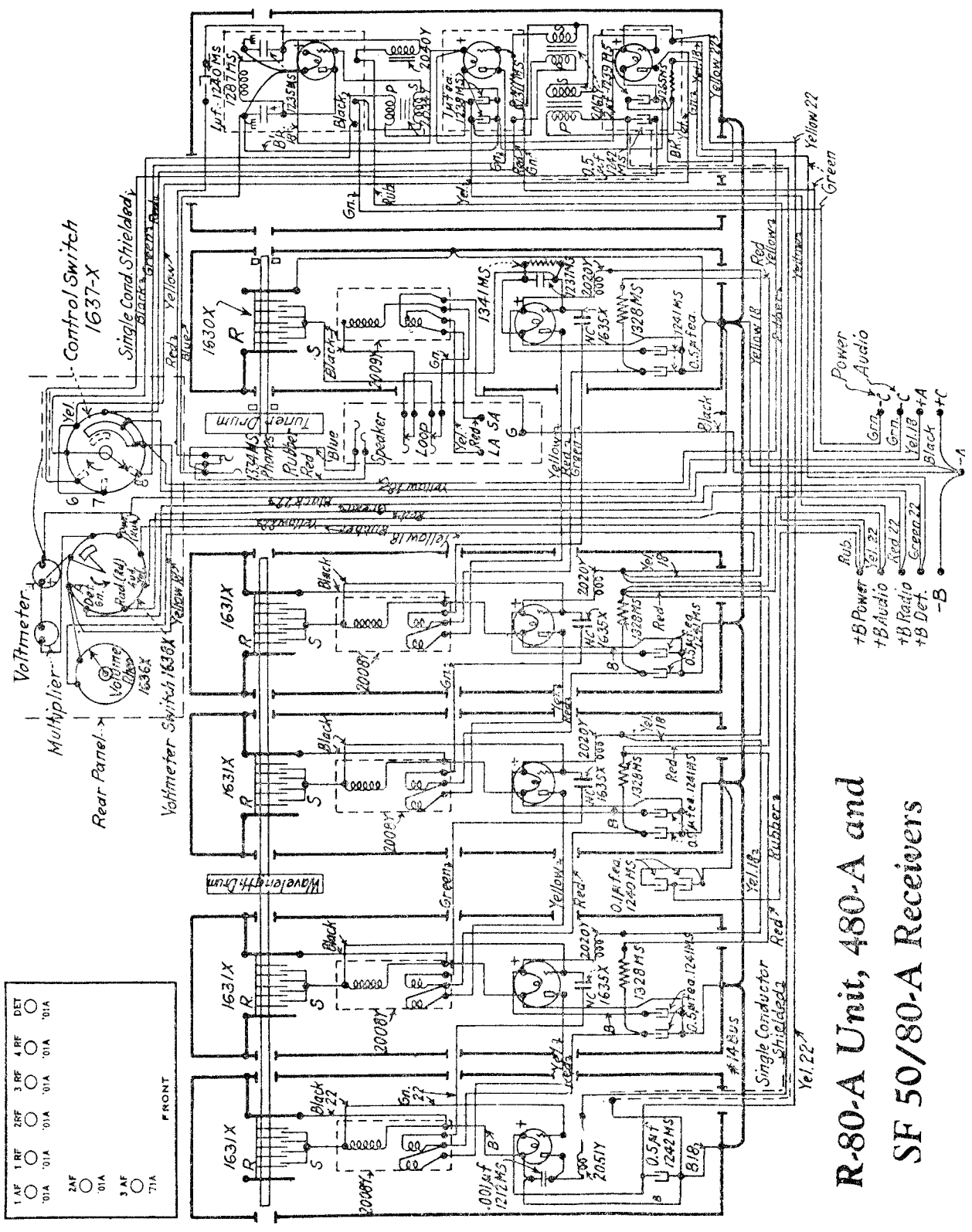
475-A and SF 45/75 Receivers



TRANSFORMER TERMINAL STRIP CONNECTIONS

FADA RADIO & ELECTRIC CORP.

MODEL R-80-A Unit
480-A
SF 50/80-A
Schematic



Model Fada's 480-A.

1 AF	2 AF	3 RF	4 RF	DET
01A	01A	01A	01A	01A
2 AF	3 AF			
01A	01A			
71A				

FRONT

R-80-A Unit, 480-A and
SF 50/80-A Receivers

FADA RADIO & ELECTRIC CORP.

MODEL 475UA
472UA
475CA
472CA

**"Special" A. C. Receiver 265-UA or CA and RP-65-UA or CA
262-UA or CA and RP-62-UA or CA**

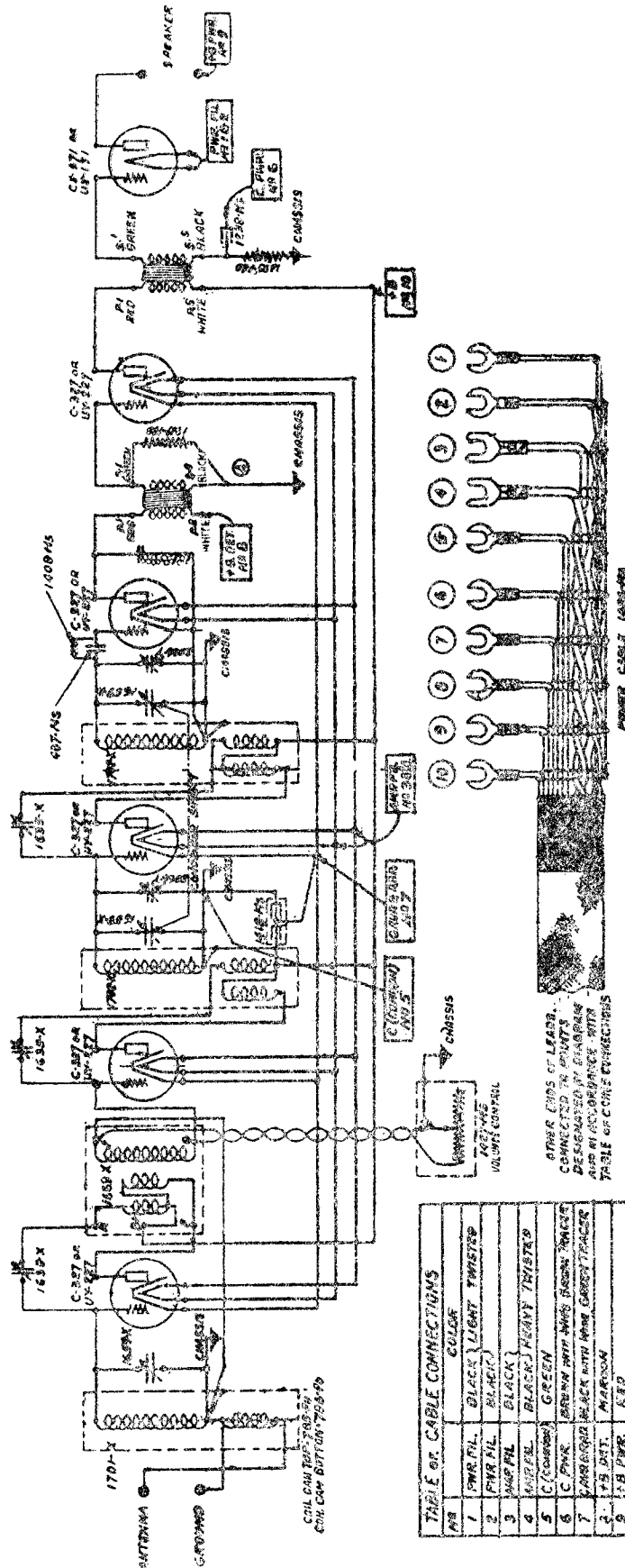
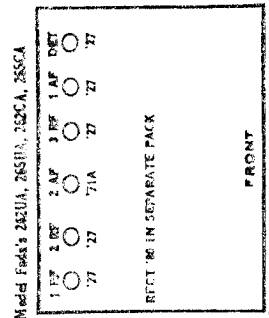


TABLE OF CABLE CONNECTIONS

NO.	WIRE FIL.	BLACK	LIGHT TWISTED
1	PHR. FIL.	BLACK	LIGHT TWISTED
2	PHR. FIL.	BLACK	
3	PHR. FIL.	BLACK	
4	MUTUEL	BLACK	HEAVY TWISTED
5	C. PHR.	GREEN	
6	C. PHR.	GREEN	HEAVY TWISTED
7	MUTUEL	BLACK	WITH HEAVY GREEN TWISTED
8	1.5 DET.	MARKER	
9	1.5 PHR.	RED	
10	1.5	RED	WITH HEAVY BLACK TWISTED

- 1212-MS Condenser - Detector filter - .001 mfd
- 1236-MS Condenser - By-pass - 1.0 mfd - 200 Volts (small)
- 1242-MS Condenser - By-pass - 0.5 mfd - 200 Volts (small)
- 1311-MS Resistance - carbon - 250,000 ohms (yellow)
- 1375-MS Resistance - carbon - 135,000 ohms (grey)
- 1407-MS Grid Condenser - .000125 mfd
- 1408-MS Grid Leak - 2 meg
- 1418-MS Condenser - By-pass - 0.25 - 0.25 mfd 200-400V.
- 1341-MS Resistance - carbon (green) 20,000 ohms
- 1410-MS Main filter condenser black - 10 $\frac{1}{2}$ mfd
- 1414-MS Resistance - W.W. (yellow & white) - 250 ohms
- 1415-MS Resistance - W.W. (green & white) } 2,000 ohms
- 1416-MS Resistance - W.W. (white & white) } 3,000 ohms
- 1417-MS Resistance - carbon (blue) - 50,000 ohms
- 1419-MS Condenser (line buffer) - 0.5 mfd - 400 volts

For Power Unit See Model 30A



OTHER Wires OF LEADS CONNECTED TO PRINTS DESIGNATED BY DIAGRAM AND IN ACCORDANCE WITH TABLE OF CABLE CONNECTIONS

FADA RADIO & ELECTRIC CORP.

MODEL "C"
Electric Unit

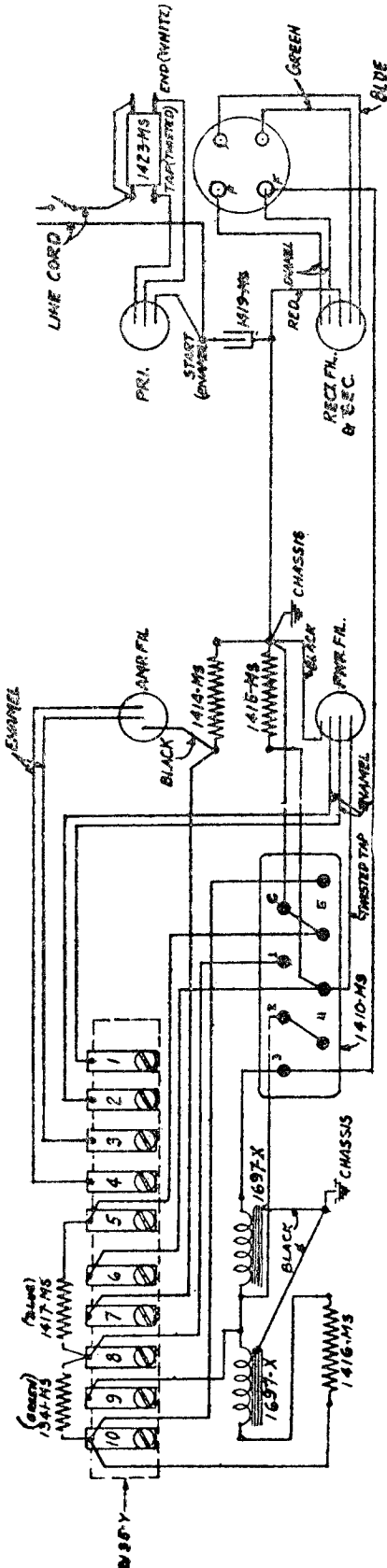
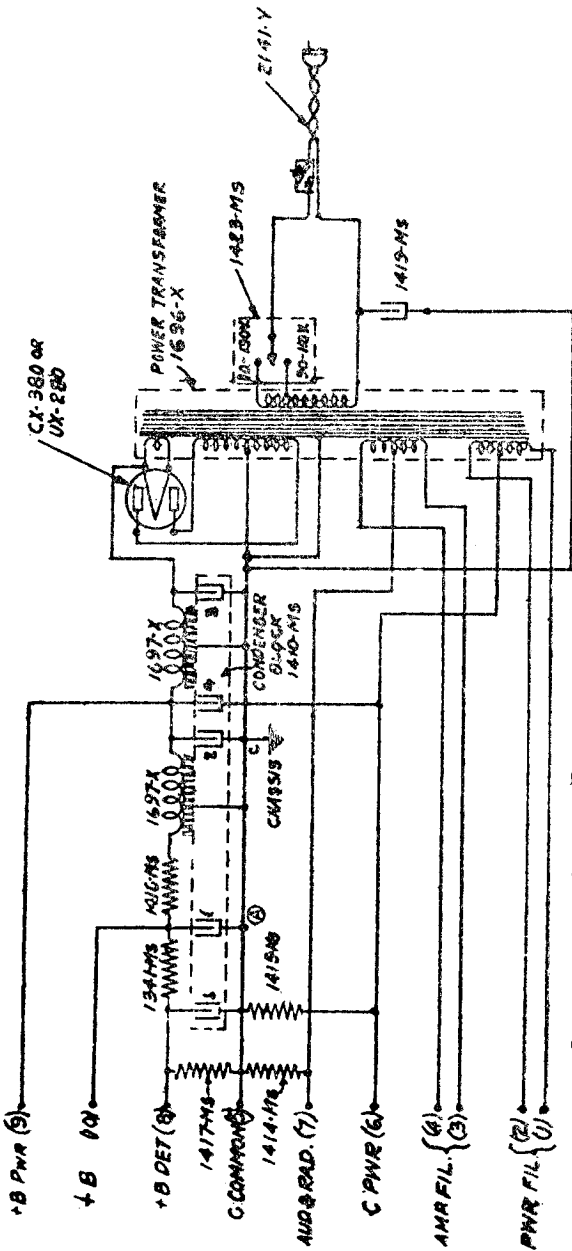


TABLE OF CABLE CONNECTIONS

- 1 } POWER FILAMENT
- 2 }
- 3 } AMPR FILAMENT
- 4 }
- 5. C. COMMON
- 6- C. PWR
- 7- C. AUD. & RAD.
- 8- +B DET.
- 9- +B PWR
- 10- +B

Type "J" unit for 25 cycle current is similar, except that a 1706X power transformer is used instead of the 1696X transformer as indicated on the type "C" unit for 60 cycles.

ACTUAL WIRING DIAGRAM



SCHEMATIC WIRING DIAGRAM

- 1341 Ms Carbon 20,000 ohms red and green or green only
- 1414 Ms Wire 250 ohms yellow and white
- 1415 Ms Wire 2,000 ohms green and white
- 1416 Ms Wire 3,000 ohms white and white
- 1417 Ms Carbon 50,000 ohms blue

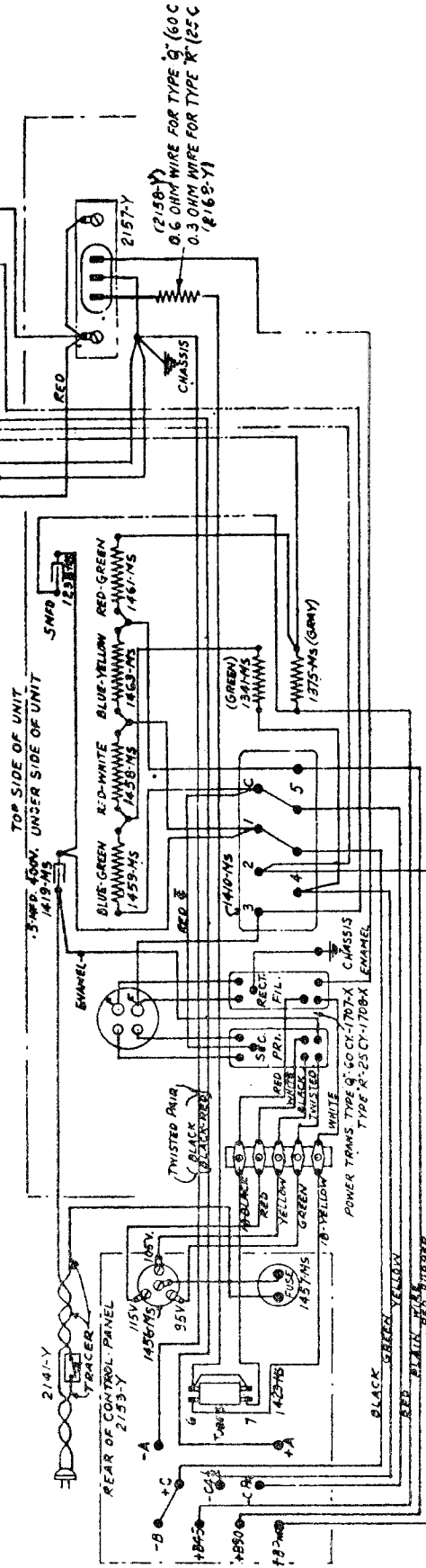
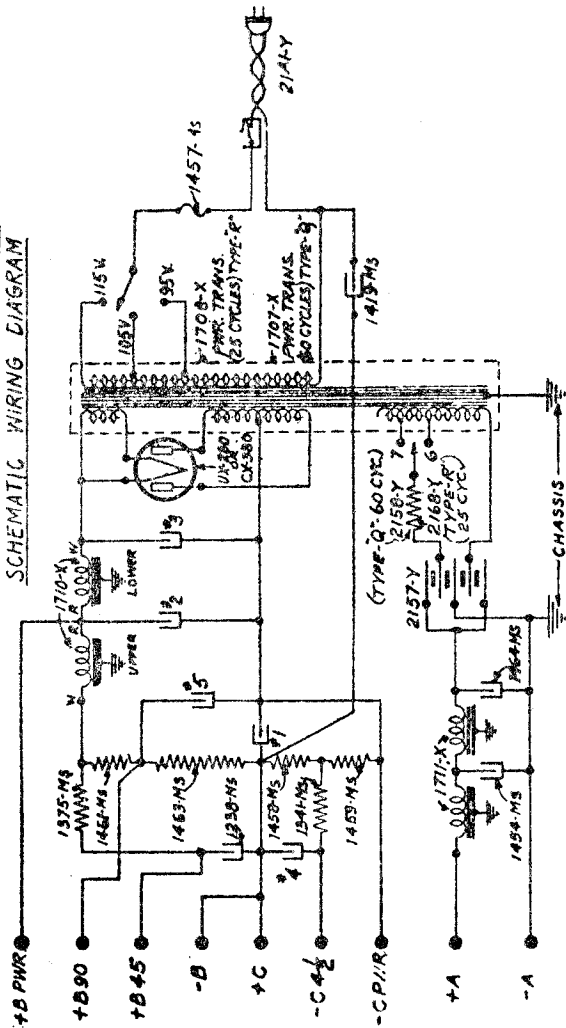
Type "C" Electric Unit, used with "Special" and "7" AC Receivers

MODEL ABC S.P.U.
66-Q, 62-R

FADA RADIO & ELECTRIC CORP.

- 1375 Ms Grey 125,000 ohms
- 1341 Ms Green 20,000 ohms
- 1458 Ms Red-White 75 ohms
- 1459 Ms Blue-Green 500 ohms
- 1461 Ms Red-Green 750 ohms
- 1463 Ms Blue-Yellow 10,000 ohms

SCHMATIC WIRING DIAGRAM



ACTUAL WIRING DIAGRAM

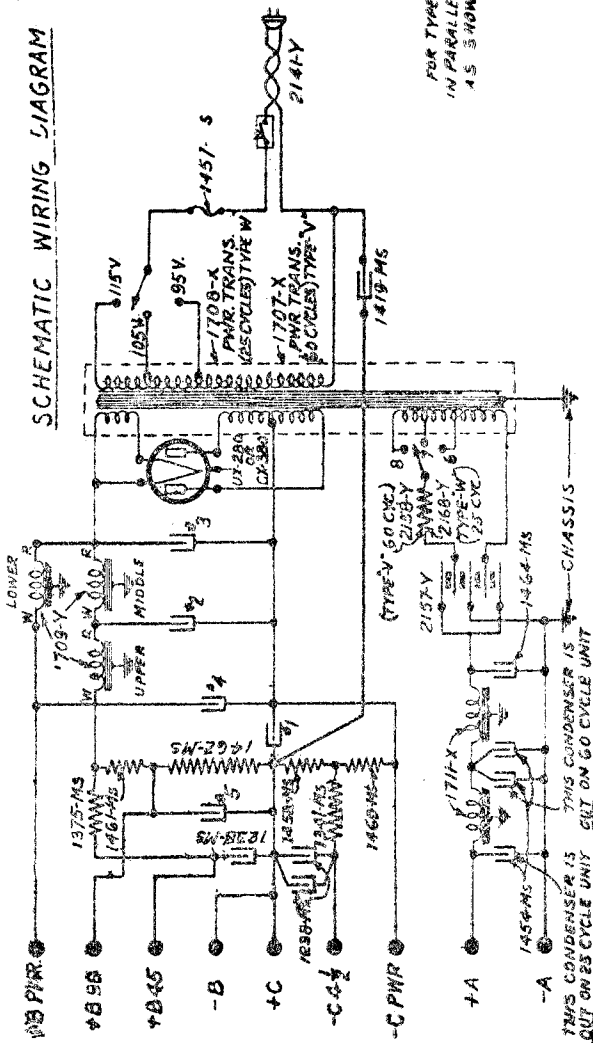
“ABC” Six Volt Tube Supply Unit — Types 66-Q and 62-R

FADA RADIO & ELECTRIC CORP.

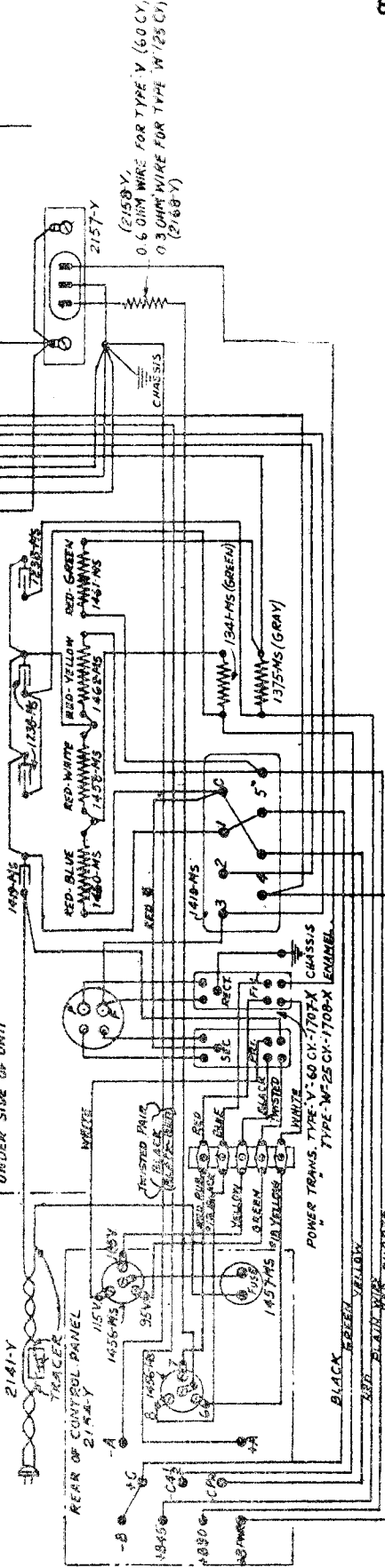
MODEL ABC S.P.U.

86-V, 82-W

SCHEMATIC WIRING DIAGRAM



TOP SIDE OF UNIT
UNDER SIDE OF UNIT



ACTUAL WIRING DIAGRAM

“ABC” Six Volt Tube Supply Unit — Types 86-V and 82-W

MODEL 10,11,30,31
 MODEL 10Z,11Z,30Z,31Z FADA RADIO & ELECTRIC CORP.
 Schematic

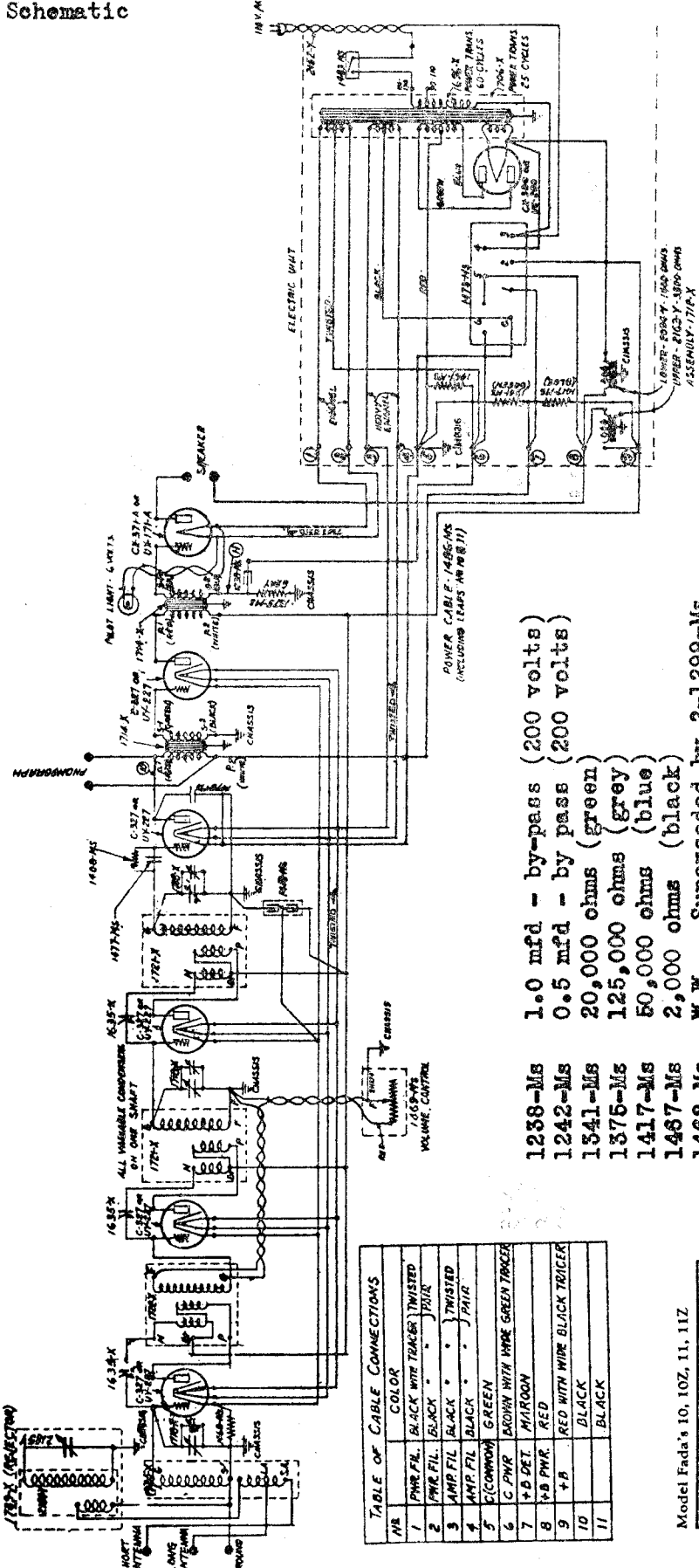
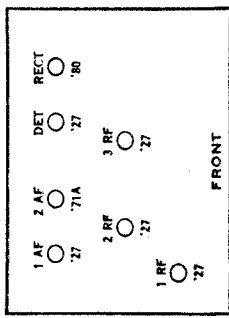


TABLE OF CABLE CONNECTIONS

NO	COLOR
1	PWR FIL BLACK WIRE TRACER TWISTED PAIR
2	PWR FIL BLACK " " TWISTED PAIR
3	AMP FIL BLACK " " TWISTED PAIR
4	AMP FIL BLACK " " TWISTED PAIR
5	C (COMMON) GREEN
6	C PWR BROWN WITH WIRE GREEN TRACER
7	+B DET MAROON
8	+B PWR RED
9	+B BLACK
10	RED WITH WIRE BLACK TRICER
11	BLACK

- 1238-MS 1.0 mfd - by-pass (200 volts)
- 1242-MS 0.5 mfd - by pass (200 volts)
- 1341-MS 20,000 ohms (green)
- 1375-MS 125,000 ohms (grey)
- 1417-MS 50,000 ohms (blue)
- 1467-MS 2,000 ohms (black)
- 1468-MS W.W. - Superseded by 2-1299-MS
- 1469-MS Volume control - 20,000 ohms
- 1477-MS .000125 mfd moulded mica (green dot)
- 1478-MS Condenser - .001 mfd moulded mica (orange)
- 1485-MS Pilot lamp - 6 volts (yellow)
- 2-1299-MS Resistor - 250 ohms (light brown)
- 2094-Y Choke - 1,400 ohms
- 2163-Y Choke - 3,500 ohms

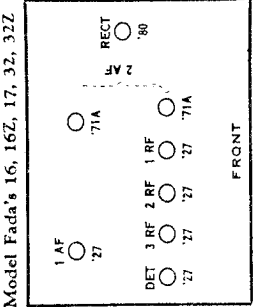
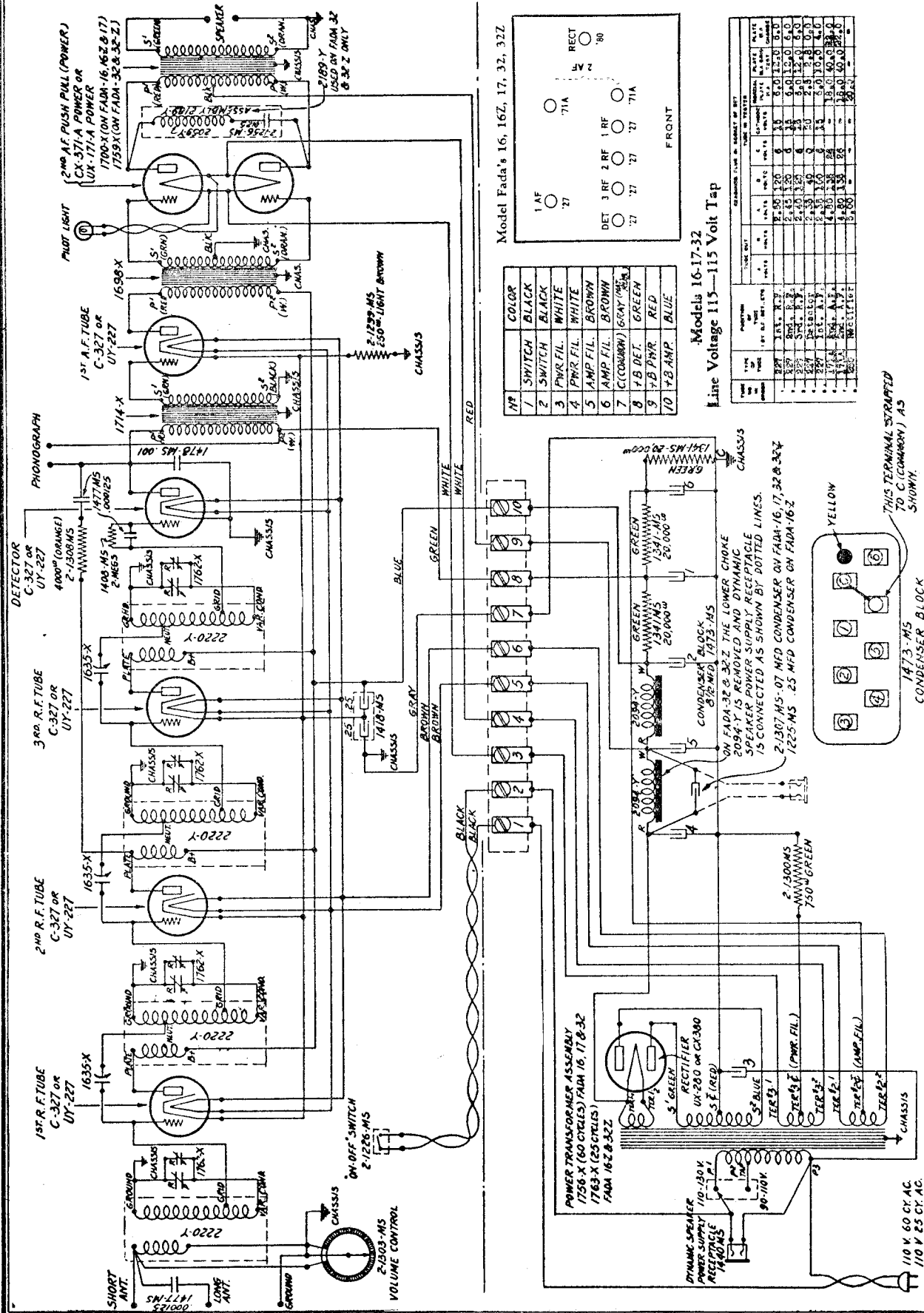
Model Fada's 10, 10Z, 11, 11Z



10, 11, 30 and 31 Receivers—60 cycles
 10Z, 11Z, 30Z and 31Z Receivers—25 cycles

MODEL 16, 17, 32
MODEL 16Z, 32Z
Schematic

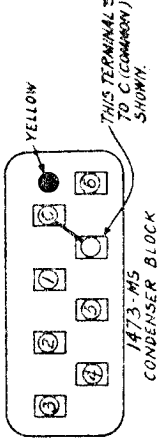
FADA RADIO & ELECTRIC CORP.



Model Fada's 16, 16Z, 17, 32, 32Z

Line Voltage 115—115 Volt Tap

LINE VOLTAGE	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	
1A5	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
2A5	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
6X4	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
6AV6	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
6BE6	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250

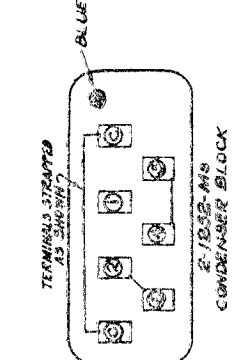
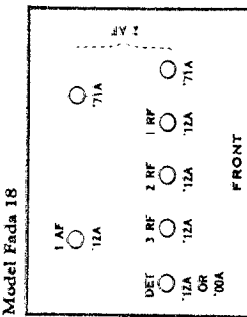
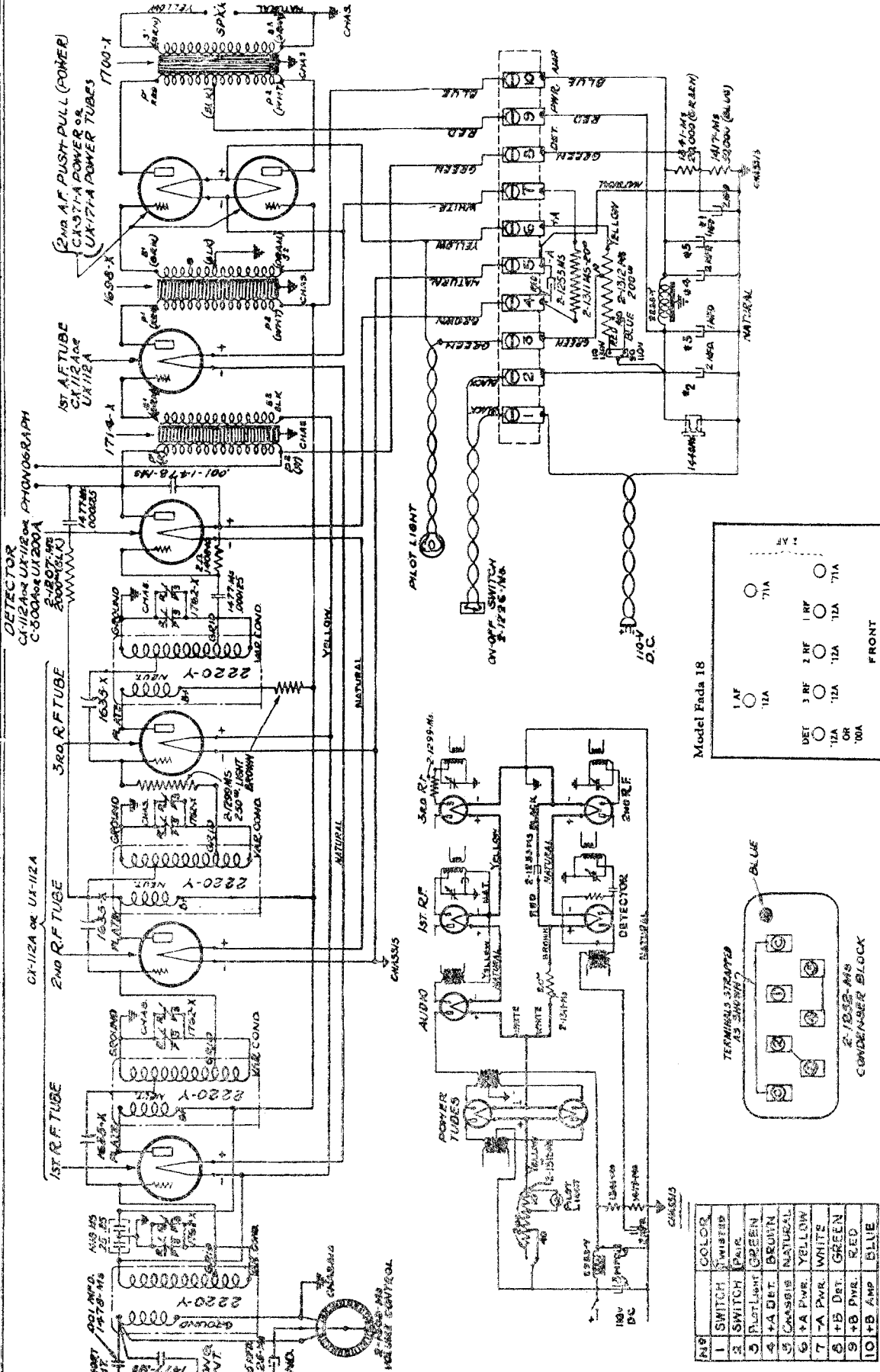


16, 17 and 32 Receivers - 60 cycles 16-Z and 32-Z Receivers - 25 cycles

110 K. 60 CY. AC.
110 V. 25 CY. AC.

MODEL 18 DC
Schematic

FADA RADIO & ELECTRIC CORP.



PAIR	COLOR
1	SWITCH
2	SWITCH
3	PILOT LIGHT
4	+A DET.
5	CONDENSER
6	+A PWR.
7	-A PWR.
8	+B DET.
9	+B PWR.
10	+B AMP.

18 DC Receiver
for use with direct current only

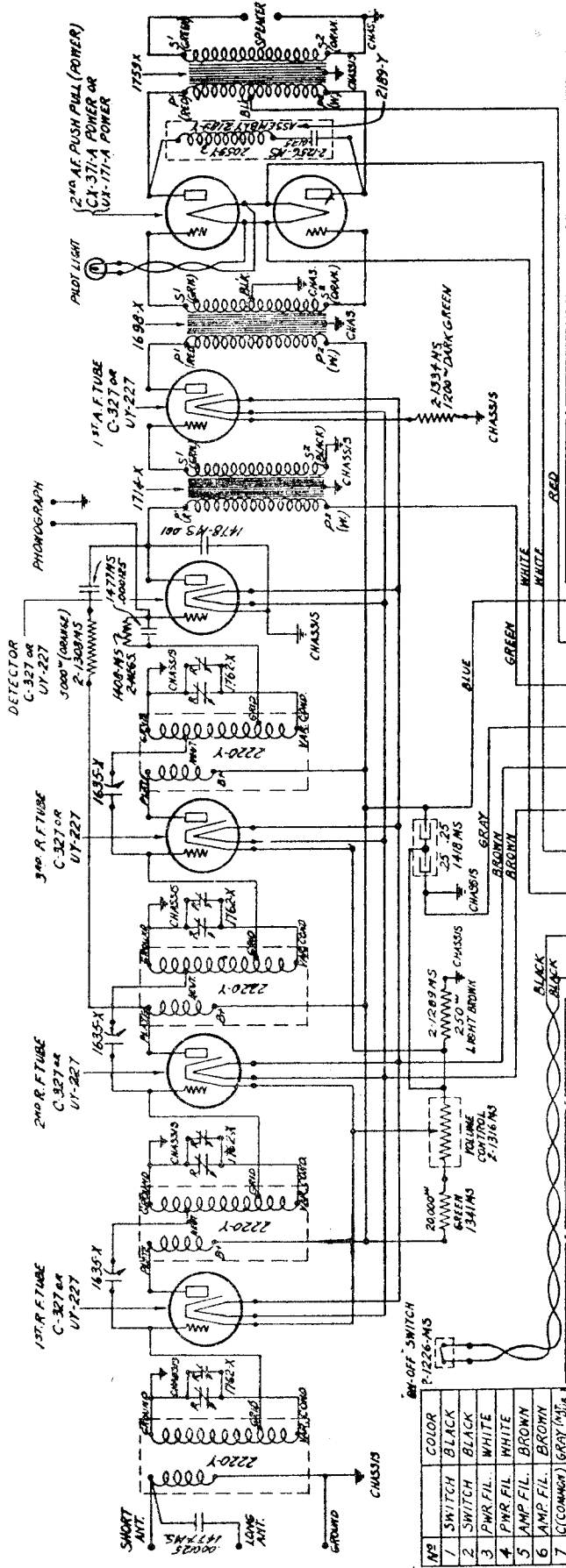
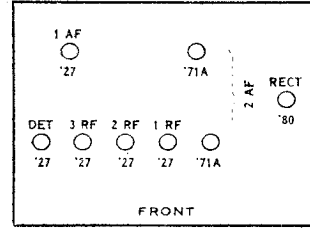
FADA RADIO & ELECTRIC CORP.

MODEL 20,
MODEL 20Z
Schematic

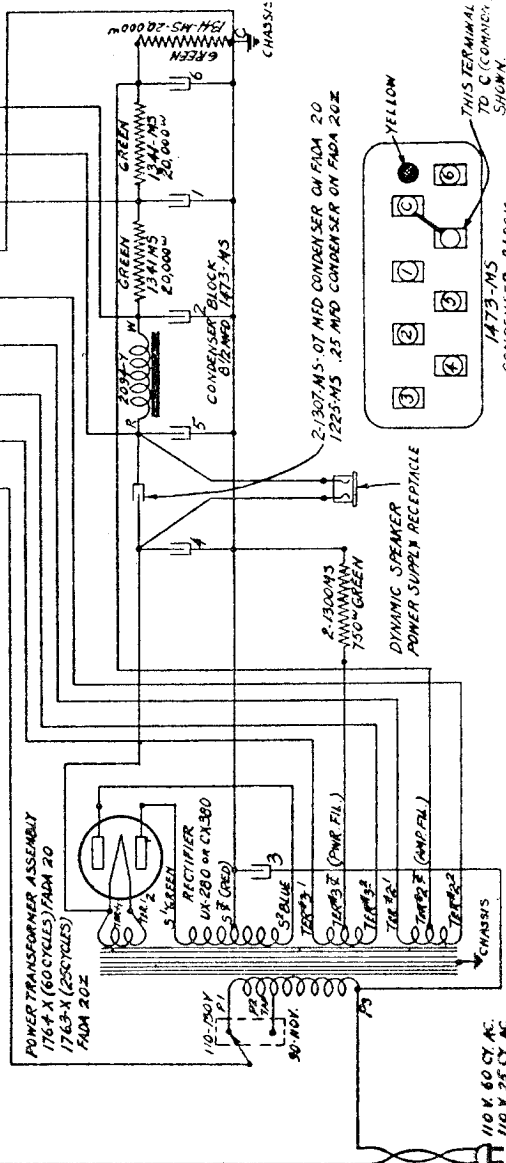
Line Voltage 115—Set on High Voltage—Volume Control Position Max

TUBE NO. IN CHASSIS	TYPE OF TUBE	POSITION OF TUBE (1ST, 2ND, ETC.)	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE HEATER VOLTS	PLATE RES. Ω	PLATE CURR. MA	SCREEN CURR. MA
1	3X7	1st RF	2.5	148	2.4	140	7	16	6.8	11.0	4.8
2	3X7	2nd RF	2.5	148	2.4	140	7	16	6.8	11.0	4.8
3	3X7	2nd RF	2.5	148	2.4	140	7	16	6.8	11.0	4.8
4	3X7	DET.	2.5	66	2.4	65	0	21	5.4	8.0	1.6
5	3X7	1st AF	2.5	155	2.4	154	7	16	5.0	6.7	1.7
6	3Y1	2nd AF	5.1	155	5.0	154	55	-	80.0	25.0	3.6
7	3Y1	2nd AF	5.1	155	5.0	154	55	-	80.0	25.0	3.6
8	360	Rect.	5.1	-	5.0	-	-	-	84	-	-

Model Fada's 20, 20Z



NO.	COLOR
1	BLACK
2	BLACK
3	BLACK
4	WHITE
5	BROWN
6	BROWN
7	(COMMON) GRAY (PWR.)
8	GREEN
9	RED
10	BLUE



20 Receiver—AC 60 cycles 20-Z Receiver—AC 25 cycles

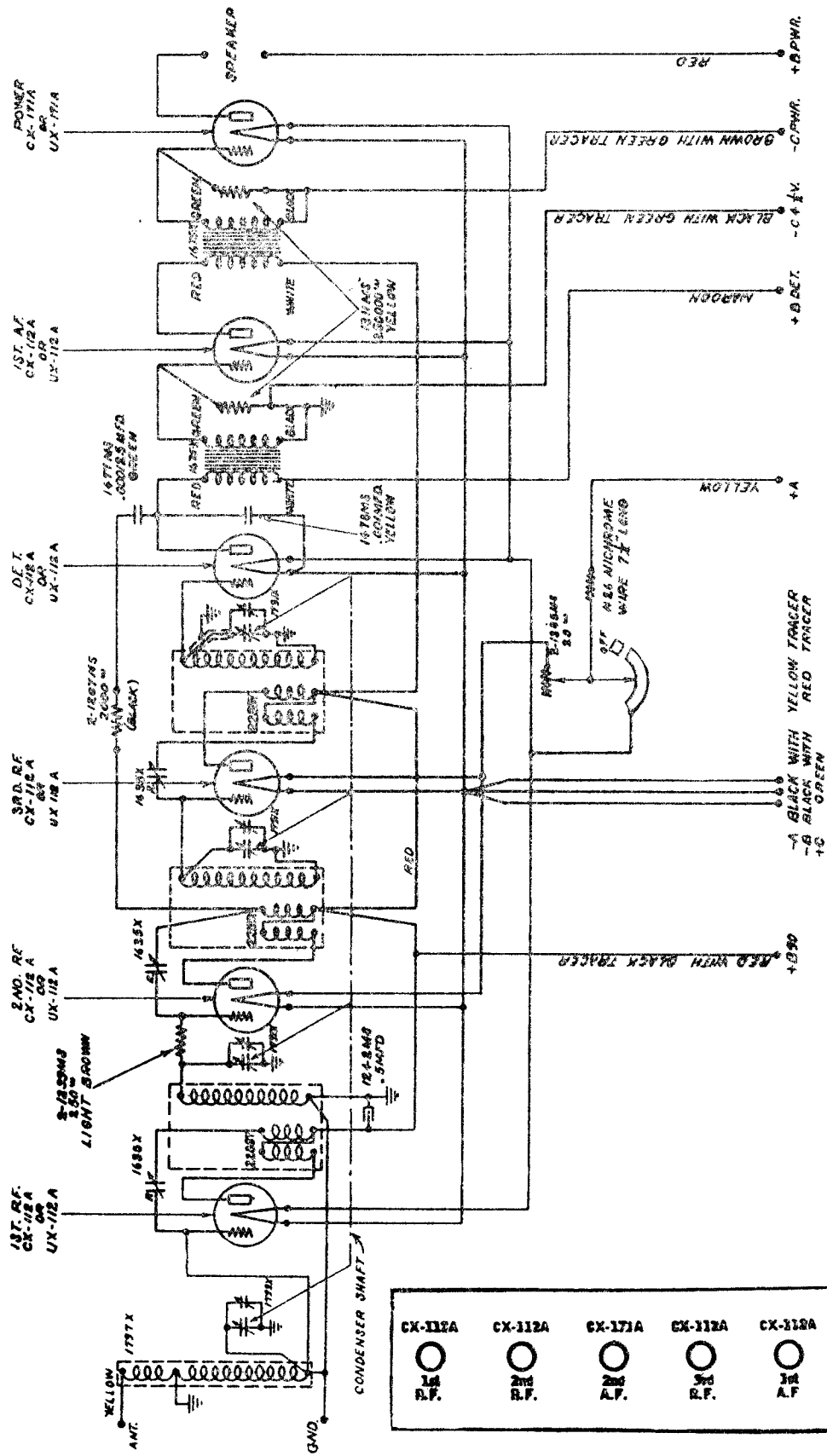
THIS TERMINAL STAMPED TO C (COMMON) IS SHOWN.

1A73-MS CONDENSER BLOCK

110 V. 60 CY. AC.
110 V. 25 CY. AC.

MODEL 22 Battery Schematic

FADA RADIO & ELECTRIC CORP.



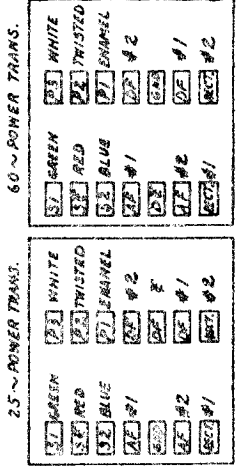
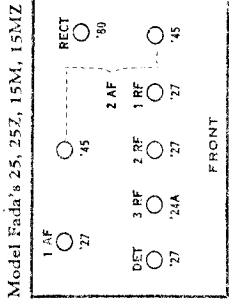
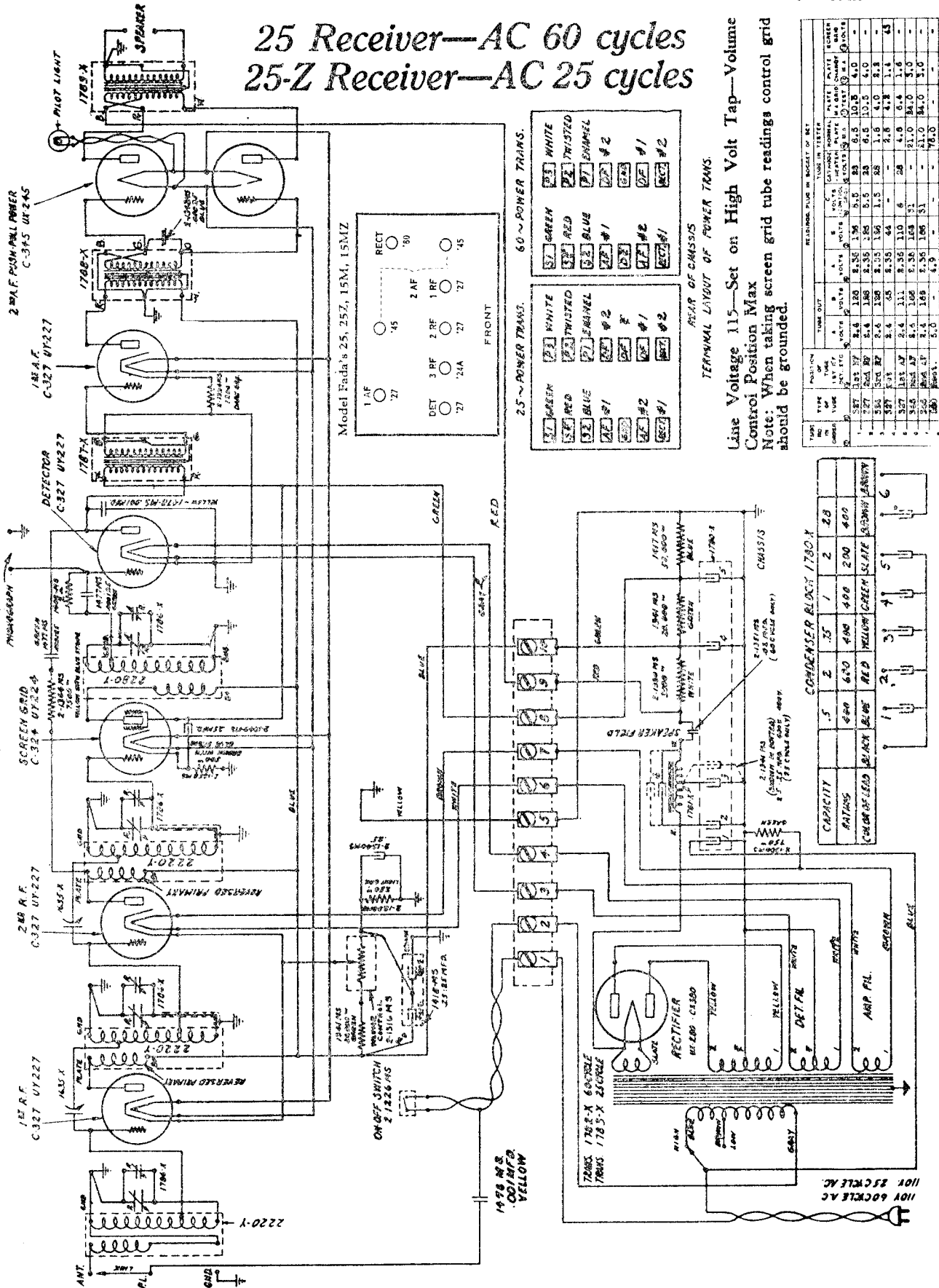
BATTERY CABLE 2090Y

22 Battery Model Receiver

FADA RADIO & ELECTRIC CORP.

MODEL 25
MODEL 25Z
Schematic

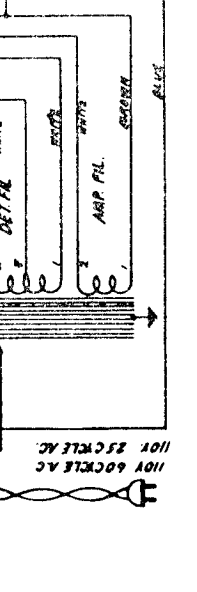
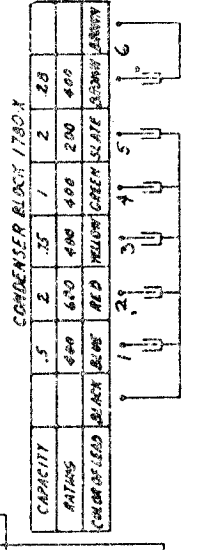
25 Receiver—AC 60 cycles
25-Z Receiver—AC 25 cycles



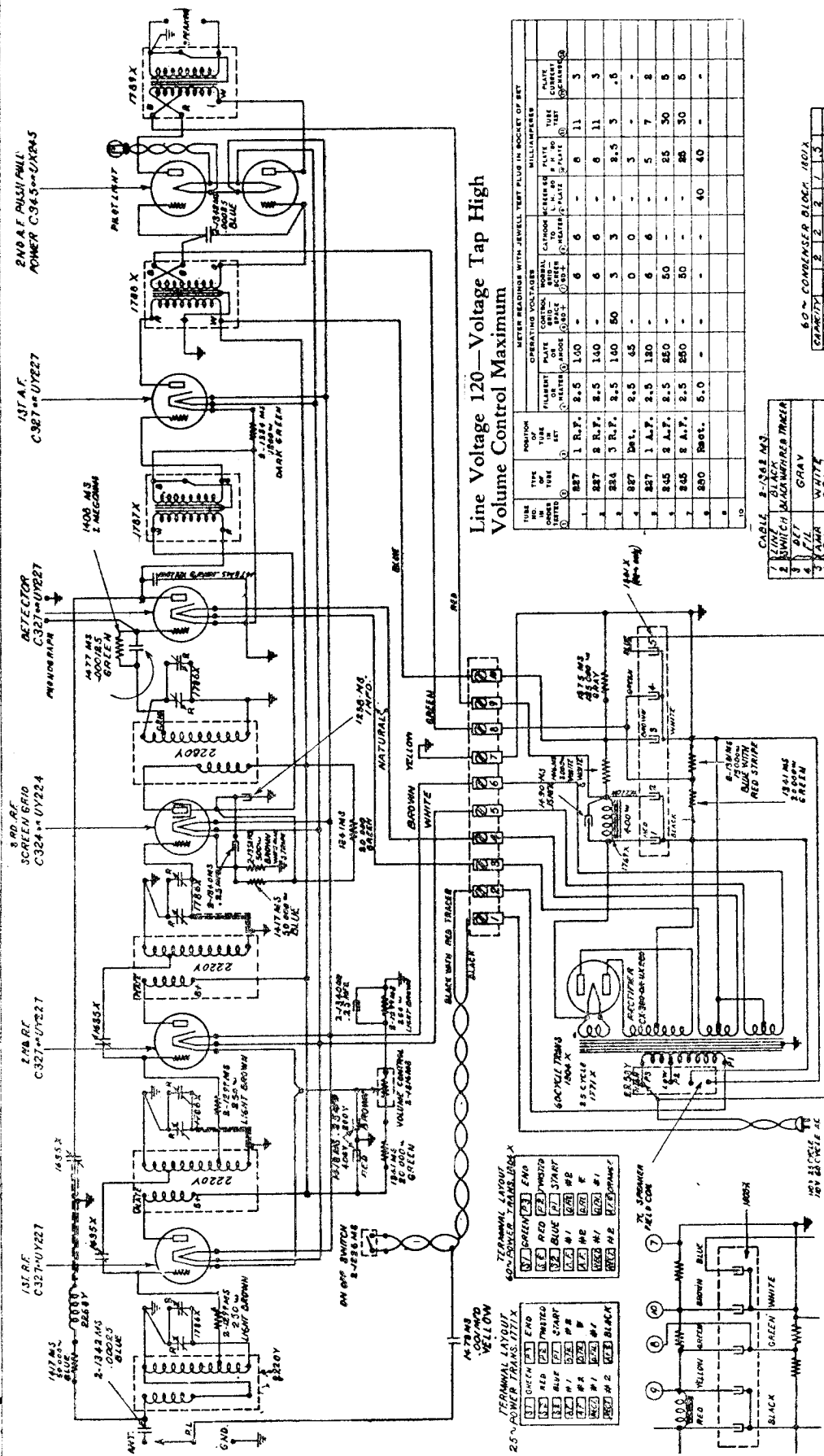
TERMINAL LAYOUT OF POWER TRANS.

Line Voltage 115—Set on High Volt Tap—Volume Control Position Max
Note: When taking screen grid tube readings control grid should be grounded.

TUBE NO. (ORDER)	TYPE	VOLTAGE	RESISTANCE	RESISTANCE PLUS IN SOCKET OF NET		RESISTANCE PLUS IN SOCKET OF NET	RESISTANCE PLUS IN SOCKET OF NET	RESISTANCE PLUS IN SOCKET OF NET	RESISTANCE PLUS IN SOCKET OF NET
				1	2				
1	1A	250	100K	100K	100K	100K	100K	100K	100K
2	2A	250	100K	100K	100K	100K	100K	100K	100K
3	2B	250	100K	100K	100K	100K	100K	100K	100K
4	2C	250	100K	100K	100K	100K	100K	100K	100K
5	2D	250	100K	100K	100K	100K	100K	100K	100K
6	2E	250	100K	100K	100K	100K	100K	100K	100K
7	2F	250	100K	100K	100K	100K	100K	100K	100K



MODEL 25 and 25Z
M-250 and M-250Z units FADA RADIO & ELECTRIC CORP.



Line Voltage 120—Voltage Tap High
Volume Control Maximum

TUBE IN SET	TYPE	OPERATING VOLTAGE (V)	METER READING (MILLIAMPERES)	TEST PLUG IN SOCKET OF SET
1	6X4	200	1.00	1
2	6X4	200	1.00	2
3	6X4	200	1.00	3
4	6X4	200	1.00	4
5	6X4	200	1.00	5
6	6X4	200	1.00	6
7	6X4	200	1.00	7
8	6X4	200	1.00	8
9	6X4	200	1.00	9
10	6X4	200	1.00	10

CABLE 8-1586 M3

1	LINE	BLACK
2	SWITCH	BLACK/WIRELESS PRINCE
3	BET	GRAY
4	PISTON	WHITE
5	RED	BROWN
6	FIL	YELLOW
7	GROUND	GREEN
8	AC POWER	BLACK
9	WATER	BROWN
10	DRIVE	RED

6.0 CONDENSER BLOCK 1803X

CAPACITY	5	2	1	5
RATING	600	400	400	200
TOLERANCE	PLUS 20% MINUS 10%			
TEMP.	-55°C TO +100°C			

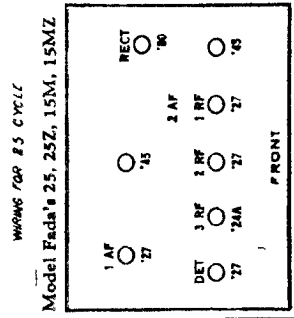
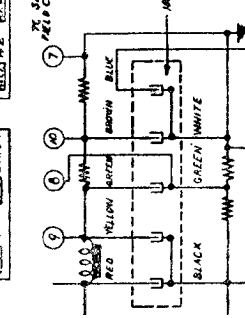
25-CONDENSER BLOCK 1805X

CAPACITY	2	2	2	1
RATING	600	400	400	200
TOLERANCE	PLUS 20% MINUS 10%			
TEMP.	-55°C TO +100°C			

25 and 25-Z Receivers
used with
M-250 and M-250-Z Electric Units

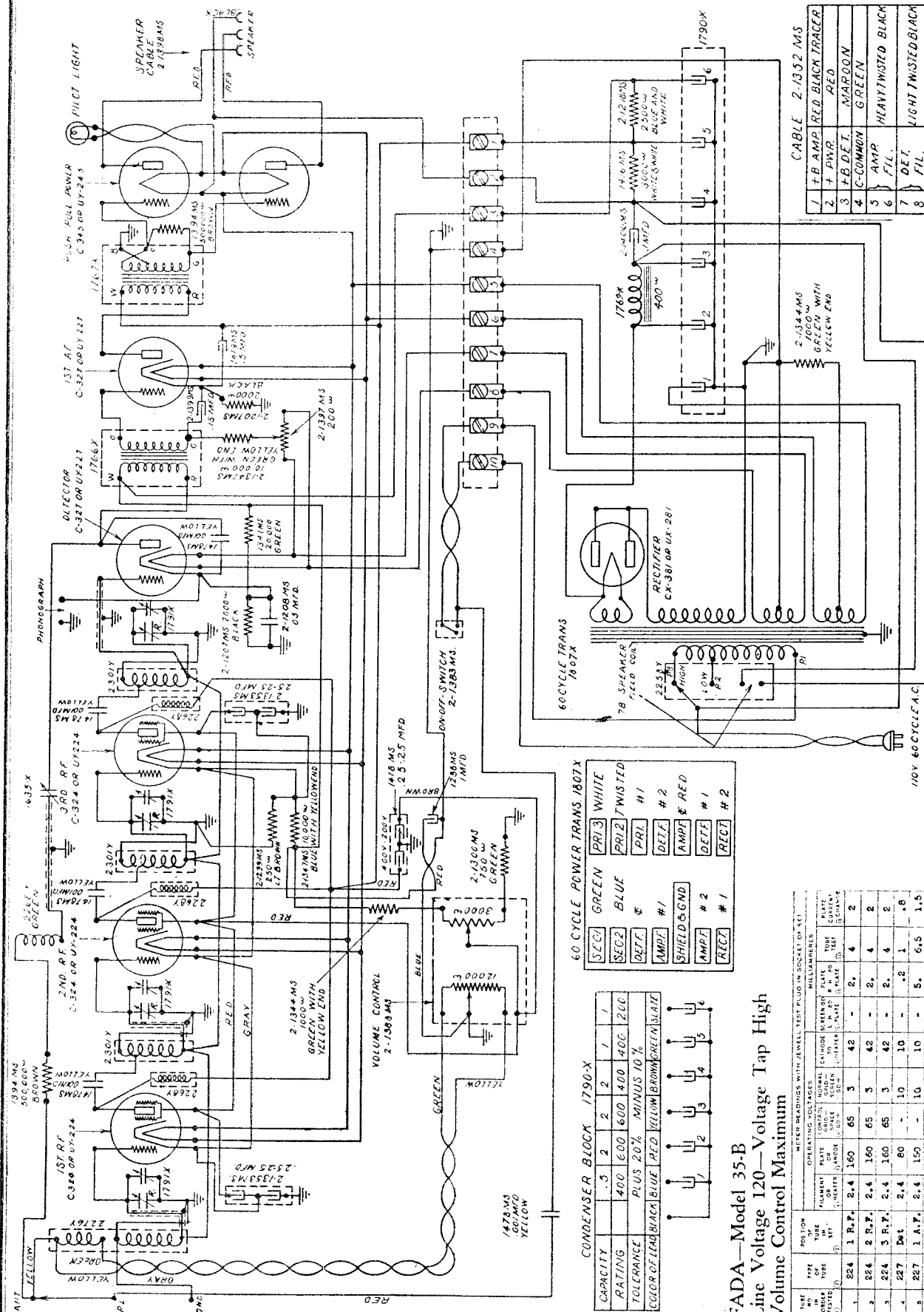
TERMINAL LAYOUT 25-POWER TRANS. 1771X

1	GREEN	END
2	RED	START
3	BLUE	START
4	RED	#2
5	BLUE	#2
6	BLACK	#2
7	BLACK	#1
8	BLACK	#1
9	BLACK	#1



FADA RADIO & ELECTRIC CORP.

MODEL 35-B
Schematic, Voltage



CABLE 2-1352 MS

1	TB AMP	RED	BLACK TRACER
2	TB PWR	RED	
3	TB DET.	MAROON	
4	C-COMMON	GREEN	
5	AMP	HEAVY TWISTED BLACK	
6	FIL.	HEAVY TWISTED BLACK	
7	DET.	LIGHT TWISTED BLACK	
8	FIL.	LIGHT TWISTED BLACK	
9	LINE	LIGHT TWISTED BLACK	
10	SWITCH	WITH RED TRACER	

Wiring Diagram 35-B

60-CYCLE POWER TRANS 1807X

SEC.1	GREEN	PR.1	WHITE
SEC.2	BLUE	PR.2	TWISTED
DET.	Φ	PR.1	#1
AMP.	#1	DET.	#2
SHIELD & GND.		AMP.	Φ RED
AMP.	#2	DET.	#1
RECT.	#1	RECT.	#2

CONDENSER BLOCK 1790-X

CAPACITY	.5	2	2	2	1	1
RATING	400	500	600	400	100	200
TOLERANCE	PLUS 20%	MINUS 10%				
COLOR OF LEAD	BLACK	BLUE	RED	YELLOW	BROWN	GREEN

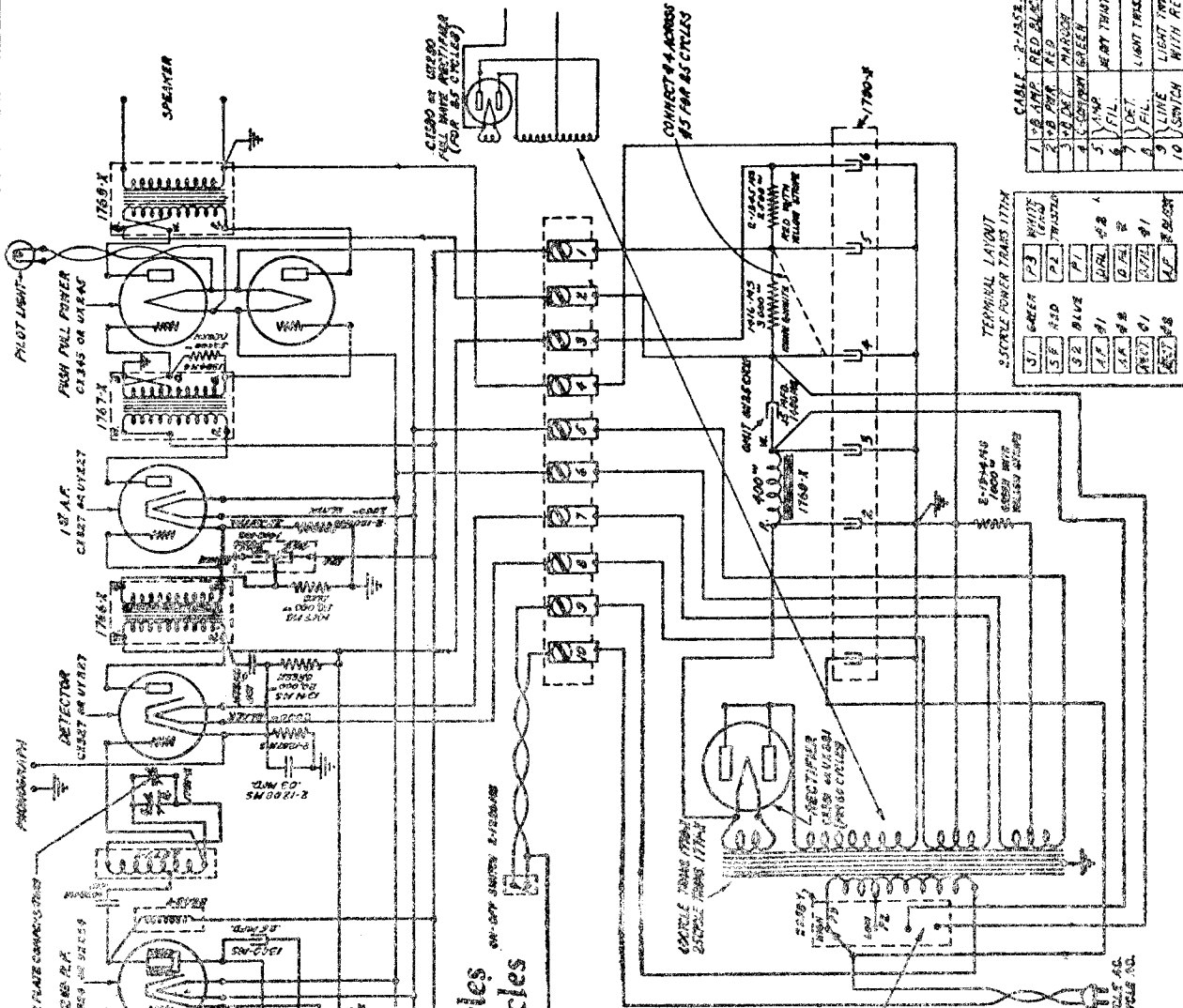
FADA—Model 35-B
Line Voltage 120—Voltage Tap High
Volume Control Maximum

WIRE MARKINGS WITH JENSEN TEST PLUG IN SOCKET (SEE FIG. 1)

TUBE NO. IN SOCKET TESTED	POSITION OF TUBE IN SOCKET	OPERATING VOLTAGES		WELLS		CONTACTS		NORMAL OPERATING VOLTAGES		NORMAL OPERATING CURRENTS	
		PLATE	GRID	NO. 1	NO. 2	NO. 1	NO. 2	NO. 1	NO. 2	NO. 1	NO. 2
1	224	1 R.P.F.	2.4	160	65	3	42	-	2	4	2
2	224	2 R.P.F.	2.4	160	65	3	42	-	2	4	2
3	224	3 R.P.F.	2.4	160	65	3	42	-	2	4	2
4	227	DET.	2.4	80	10	10	-	2	1	1	1.5
5	227	1 A.P.	2.4	150	10	10	-	5	6.5	30	5
6	245	2 A.P.	2.4	240	45	40	-	25	30	5	5
7	245	2 A.P.	2.4	240	45	40	-	25	30	5	5
8	280	Rect.	7.1	-	-	-	-	32.5	32.5	-	-

MODEL 35
MODEL 35Z
Schematic

FADA RADIO & ELECTRIC CORP.



35 Receiver—AC 60 cycles
35-Z Receiver—AC 25 cycles

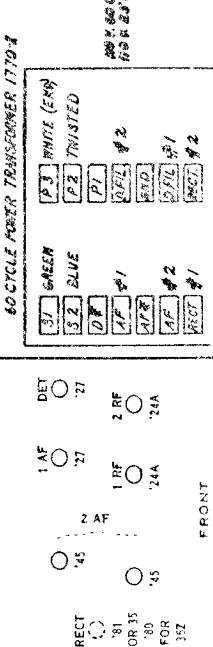
Line Voltage 115—Set on High Volt Tap—Volume Control Position Max

Note: When taking screen grid tube readings ground control grid.

TUBE ORDER	TUBE TYPE	TUBE OUT		TUBE IN SOCKET OF SET		TYPICAL TESTER		TYPICAL TUBE		TUBE	
		A	B	A	B	A	B	A	B		
1	324	1st RF	2.4	1.70	2.3	1.83	2	50	2.6	3.8	85
2	324	2nd RF	2.4	1.70	2.3	1.83	2	50	2.6	3.1	86
3	327	DET	2.4	1.55	2.3	1.66	7	7	3	3.3	—
4	327	1st AF	2.4	1.55	2.3	1.56	7	4.2	4.7	6.0	1.3
5	345	2nd AF	2.4	2.40	2.3	2.38	49	—	23.0	20.0	5
6	345	2nd AF	2.4	2.40	2.3	2.38	49	—	23.0	26.0	5
7	391	Rect.	7.2	—	7.0	—	—	—	—	—	—

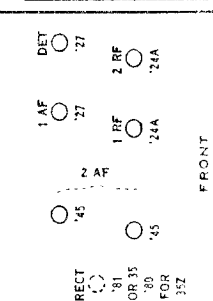
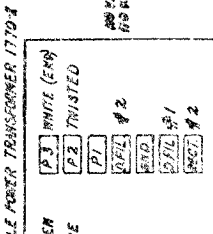
CAPACITY	TYPE	1C	2C	3C	4C	5C	6C
500	BLACK	BLUE	RED	YELLOW	BROWN	GREEN	SLATE
1000	BLACK	BLUE	RED	YELLOW	BROWN	GREEN	SLATE
2000	BLACK	BLUE	RED	YELLOW	BROWN	GREEN	SLATE
5000	BLACK	BLUE	RED	YELLOW	BROWN	GREEN	SLATE

CONDENSER BLOCK 1730-X



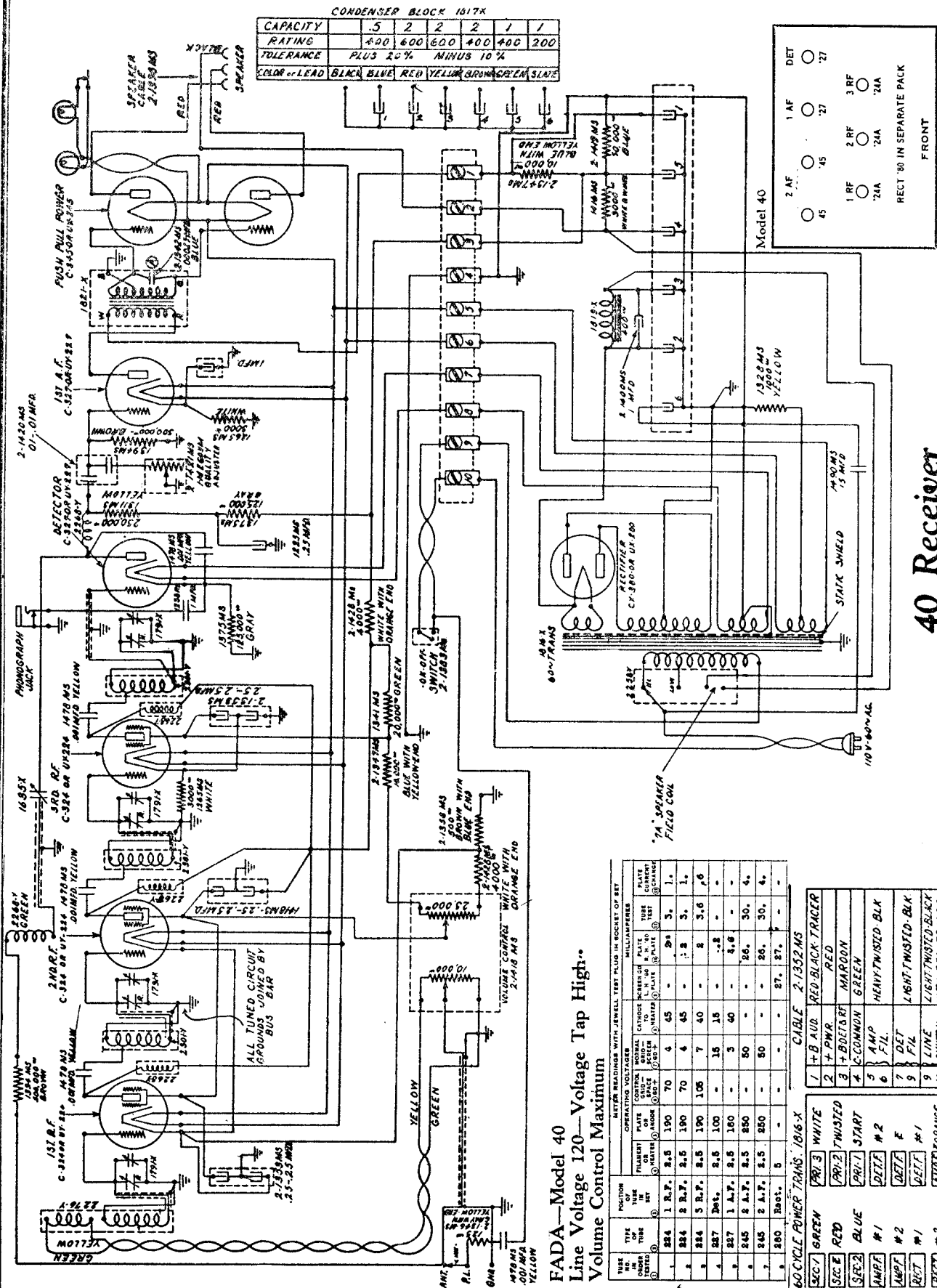
CABLE	2-500E.M.S.
1	1/8 AMP. RED ELECT. WIRE
2	1/8 AMP. RED
3	1/8 AMP. BROWN
4	1/8 AMP. GREEN
5	1/8 AMP. HEAVY TRATED BLACK
6	1/8 AMP. LIGHT TRATED BLACK
7	1/8 AMP. LIGHT TRATED BLACK
8	1/8 AMP. LIGHT TRATED BLACK
9	1/8 AMP. LIGHT TRATED BLACK
10	1/8 AMP. WITH RED TRACER

TERMINAL LAYOUT	60-CYCLE POWER TRANSFORMER
31	GREEN
32	RED
33	BLUE
34	BROWN
35	YELLOW
36	GREEN
37	SLATE
38	SLATE
39	SLATE
40	SLATE
41	SLATE
42	SLATE
43	SLATE
44	SLATE
45	SLATE
46	SLATE
47	SLATE
48	SLATE
49	SLATE
50	SLATE



MODEL 40
Schematic

FADA RADIO & ELECTRIC CORP.



40 Receiver

FADA—Model 40
Line Voltage 120—Voltage Tap High..
Volume Control Maximum

TUBE POSITION IN SET	TYPE OF TUBE	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET		MILLIAMPERES							
		CONTROL GRID	SCREEN GRID								
1	284	1 R.P.	2.5	190	70	4	45	-	29	3	1.
2	284	2 B.P.	2.5	190	70	4	45	-	1.8	3	1.
3	284	5 R.P.	2.5	190	106	7	40	-	2	3.6	.6
4	287	20.	2.5	100	-	15	15	-	-	-	-
5	287	1 A.P.	2.5	160	-	5	40	-	26.	30.	4.
6	245	2 A.P.	2.5	250	-	50	-	-	26.	30.	4.
7	245	2 A.P.	2.5	250	-	50	-	-	26.	30.	4.
8	280	200.	5	-	-	-	-	-	27.	27.	-

60-CYCLE POWER TRANS. 1016-X

SEC 7	GREEN	PR1 3	WHITE
SEC 8	RED	PR1 2	TWISTED
SEC 9	RED	PR1 1	START
AMP 1	BLUE	DELTA	# 1
AMP 2	BLUE	DELTA	# 2
RECT	BLACK	DELTA	# 1
RECT	BLACK	DELTA	# 2

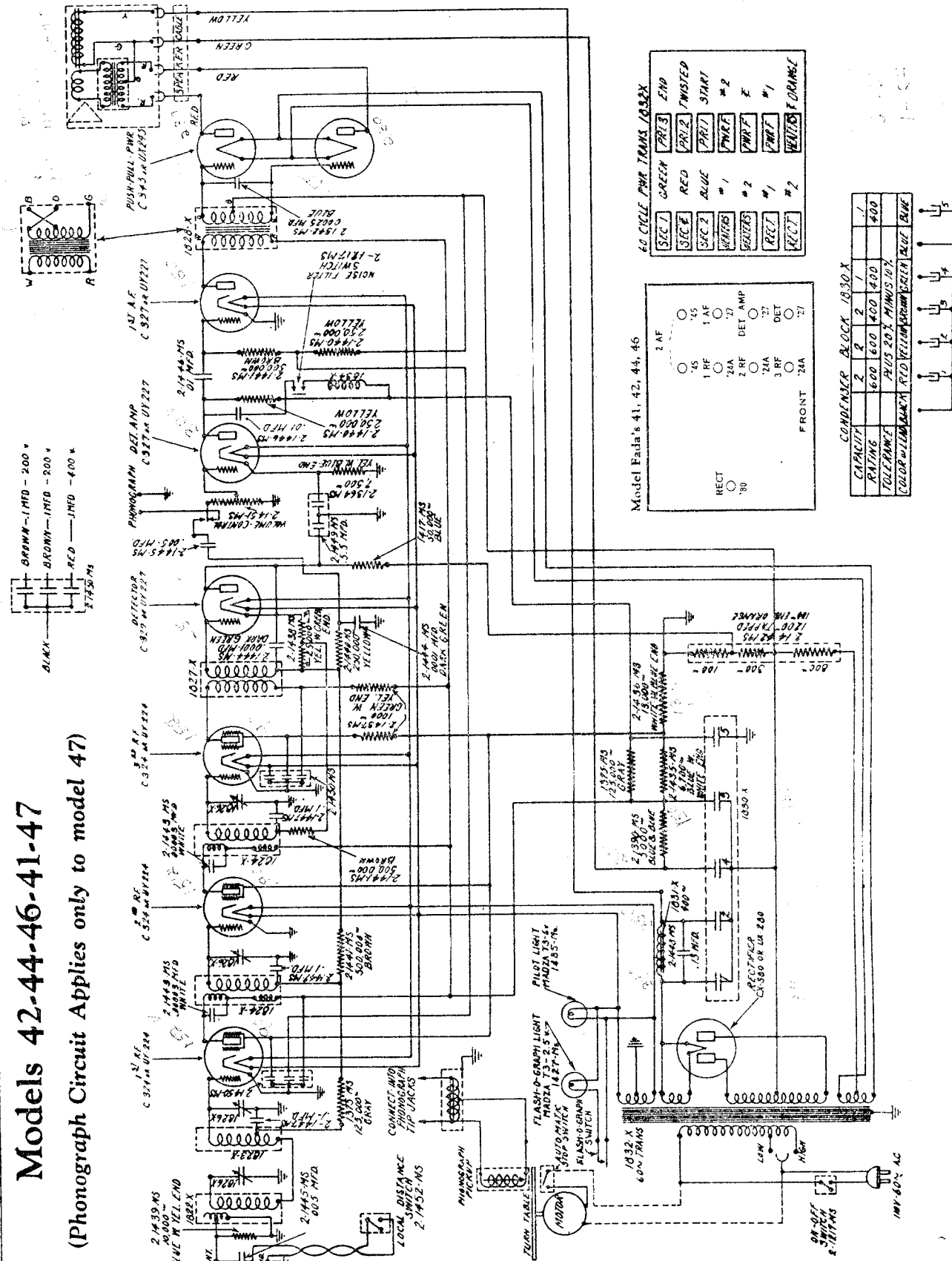
CABLE 2-1322 MS

1	+ B AUD	RED-BLACK-TRACER
2	+ PWR	RED
3	+ BDET & RT	MAROON
4	+ C COMMON	GREEN
5	+ AMP	HENNY TWISTED BLK
6	+ FIL	HENNY TWISTED BLK
7	+ DET	LIGHT TWISTED-BLK
8	+ FIL	LIGHT TWISTED-BLK
9	+ LINE	LIGHT TWISTED-BLK
10	+ SWITCH	WITH RED TRACER

MODEL 42,44,46,41,47
Schematic

FADA RADIO & ELECTRIC CORP.

Models 42-44-46-41-47
(Phonograph Circuit Applies only to model 47)



60 CYCLE PWR TRANS 1032X

SEC 1	GREEN	END
SEC 2	RED	PAR 3 TWISTED
SEC 3	BLUE	PAR 1 START
SEC 4	WHITE	PAR 2 #2
SEC 5	BLACK	PAR 4 #1
SEC 6	ORANGE	PAR 5 #2

Model Fada's 41, 42, 44, 46

RECT	30
1 AF	17
2 AF	17
3 AF	17
DET AMP	17
DET	17
FRONT	21A

CONDENSER BLOCK 1030 X

CAPACITY	2	2	1	1
RAVING	600	600	400	400
TOLERANCE	PLUS 20% MINUS 10%			
COLOR	RED	YELLOW	ORANGE	BLUE

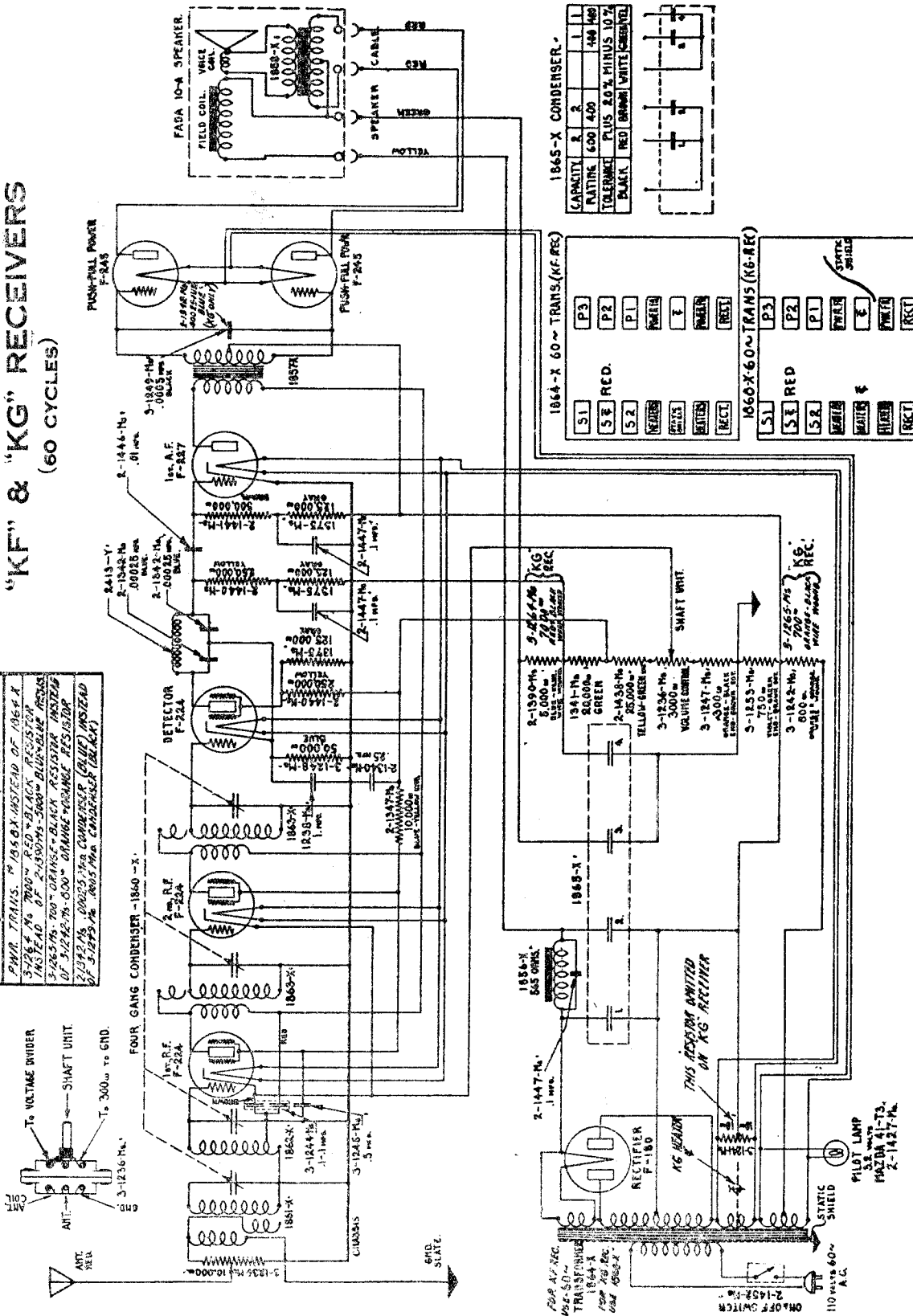


FADA RADIO & ELECTRIC CORP.

MODEL "KF", (43)
 MODEL "KG", (761,762,
 784,786)
 Schematic

"KF" & "KG" RECEIVERS
 (60 CYCLES)

50~W KG RECEIVERS REQUIRES -
 FOUR TRANS. 1865-X INSTEAD OF 1864-X
 5426-4 700-Ω RED-BLACK RESISTOR
 INSTEAD OF 2-1500Ω-500Ω-BLUE-ORANGE RESISTORS
 5426-5 700-Ω ORANGE-BLACK RESISTOR INSTEAD
 OF 5426-7 500-Ω ORANGE-VIOLET RESISTOR
 5426-6 1000Ω-1000Ω CAPACITOR (BLUE) INSTEAD
 OF 5426-5 1000Ω-1000Ω CAPACITOR (BLACK)



1865-X CONDENSER -

CAPACITY	1	2	3	4	5
RATING	600	400	400	400	400
TOLERANCE	PLUS 2.0%	MINUS 10.7%			
BLACK	RED	BROWN	WHITE	GREEN	

1864-X 60~ TRANS. (KF-REC)

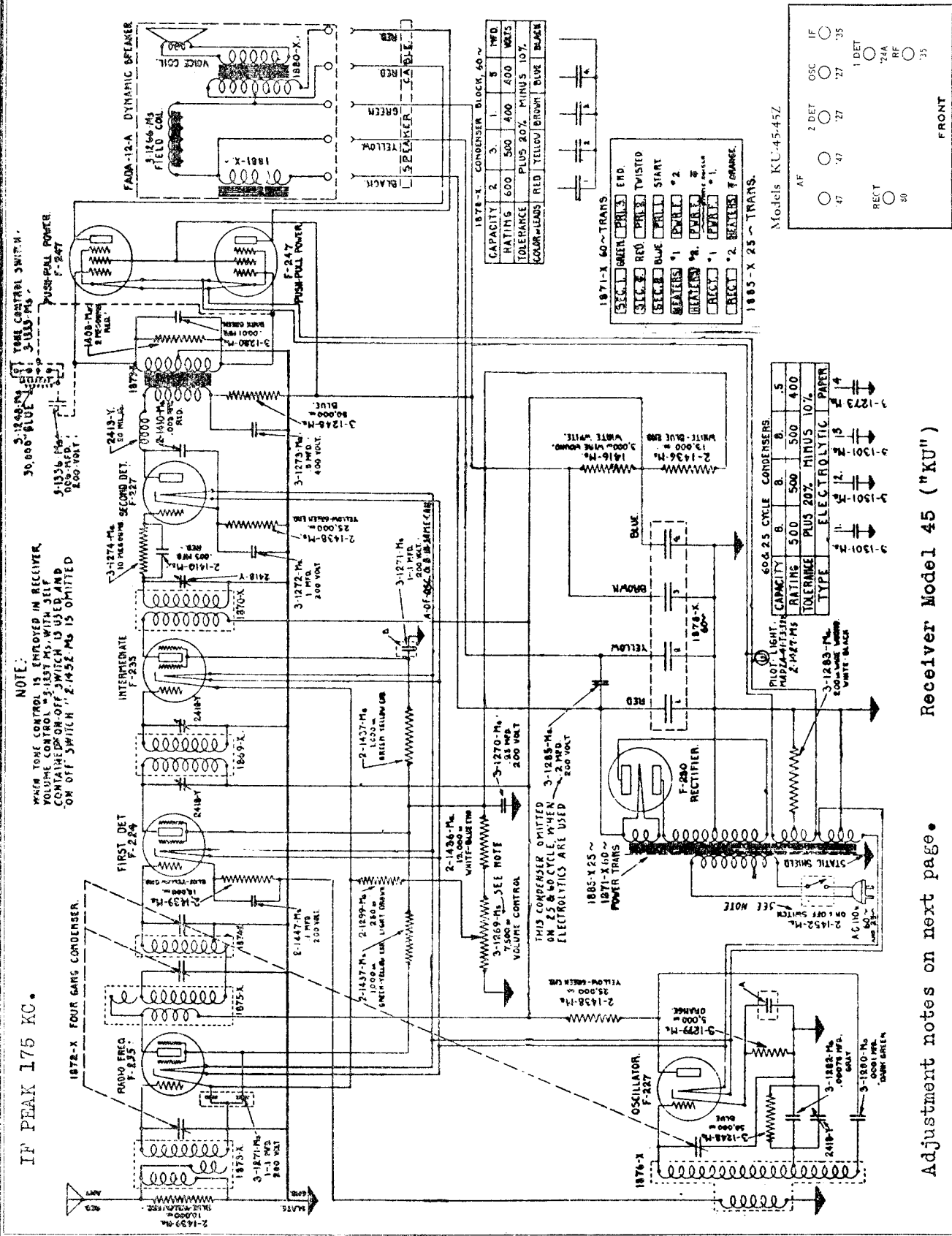
LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS10	LS11	LS12	LS13	LS14	LS15	LS16	LS17	LS18	LS19	LS20
P3	P2	P1	PAILER	P	PAILER	RECT													

1866-X 60~ TRANS. (KG-REC)

LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS10	LS11	LS12	LS13	LS14	LS15	LS16	LS17	LS18	LS19	LS20
P3	P2	P1	PAILER	P	PAILER	RECT													

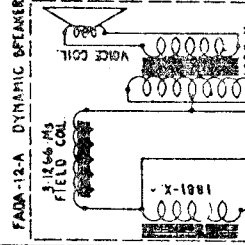
Model "KF" Chassis, Receiver model 43
 Model "KG" Chassis, Receiver model 761,762,784,786

MODEL 45, 45-Z (KU) FADA RADIO & ELECTRIC CORP. Schematic



IF PEAK 175 KC.

NOTE: WHEN TONE CONTROL IS EMPLOYED IN RECEIVER, VOLUME CONTROL IS 3-SLOT M.S. WITH SELF CONTAINED ON-OFF SWITCH IS USED AND ON OFF SWITCH 2-1452-M IS OMITTED



VOICE COIL
FIELD COIL
1880-X



BLACK
GREEN
YELLOW
RED
SPEAKER CABLE

CAPACITY	2	3	4	5	8	WTD
RATING	600	500	400	400	400	WATS
TOLERANCE	PLUS 20% MINUS 10%					
COLOR-CODES	RED	YELLOW	BROWN	BLUE	BLACK	

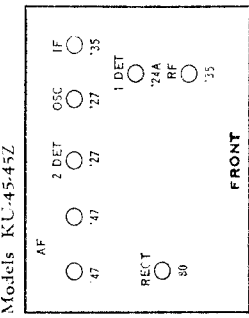
CAPACITY	2	3	4	5	8	WTD
RATING	600	500	400	400	400	WATS
TOLERANCE	PLUS 20% MINUS 10%					
COLOR-CODES	RED	YELLOW	BROWN	BLUE	BLACK	

1871-X 60~TRANS

RECT.	1	2	REVERSE	ORANGE
RECT. #1	RECT. #1	RECT. #2	RECT. #1	RECT. #2
RECT. #2	RECT. #1	RECT. #2	RECT. #1	RECT. #2

1885-X 25~TRANS

RECT.	1	2	REVERSE	ORANGE
RECT. #1	RECT. #1	RECT. #2	RECT. #1	RECT. #2
RECT. #2	RECT. #1	RECT. #2	RECT. #1	RECT. #2



600-25 CYCLE CONDENSERS

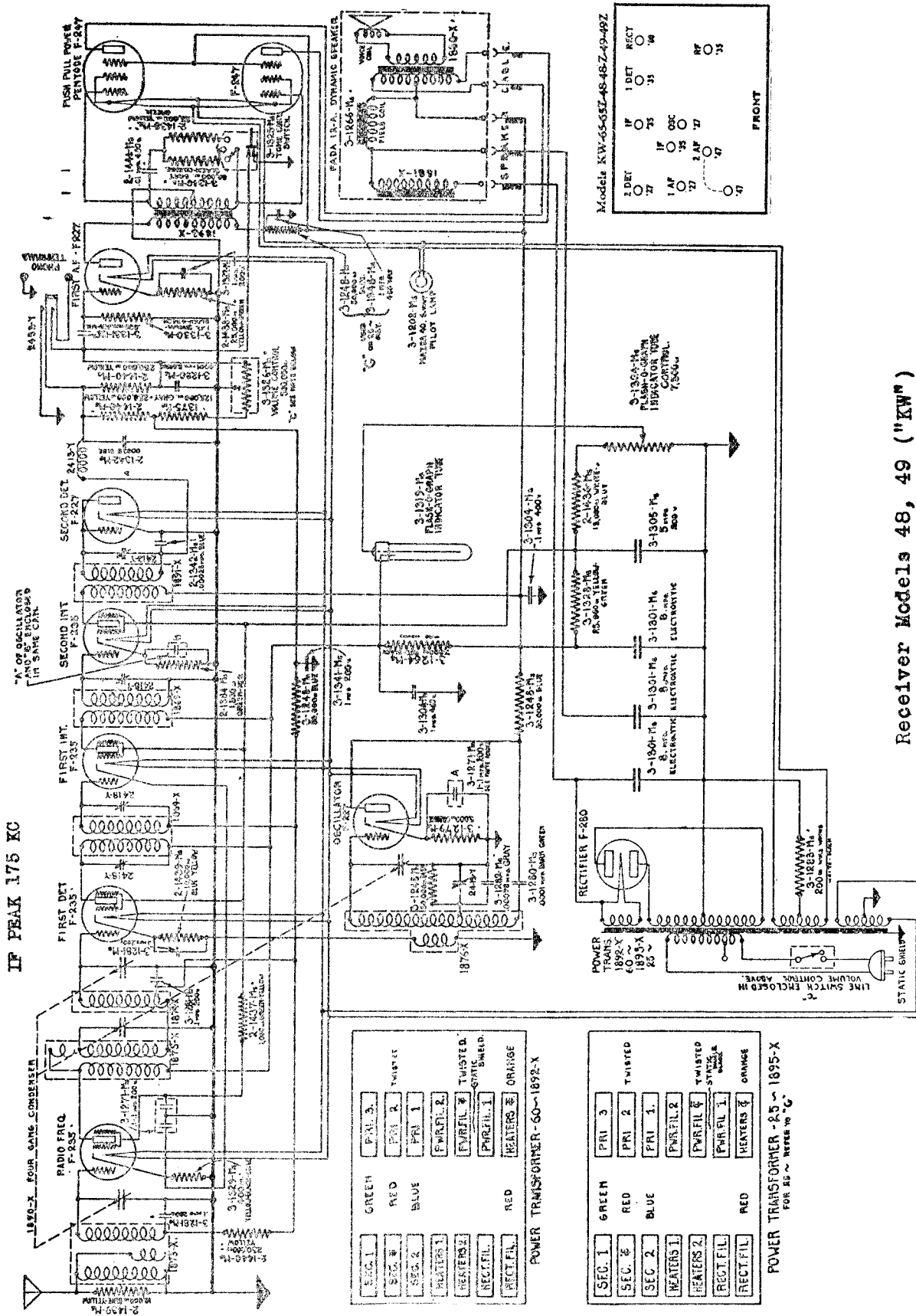
CAPACITY	8	8	8	5
RATING	500	500	500	400
TOLERANCE	PLUS 20% MINUS 10%			
TYPE	ELECTROLYTIC PAPER			
	1	2	3	4
	1	2	3	4
	1	2	3	4

Receiver Model 45 ("KU")

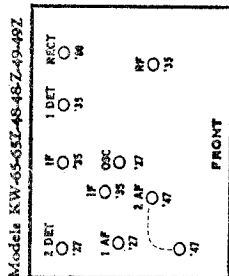
Adjustment notes on next page.

FADA RADIO & ELECTRIC CORP

MODEL 48,49 (KW)
Schematic



Receiver Models 48, 49 ("KW")



MODEL 45,48,49
Service Notes

FADA RADIO & ELECTRIC CORP.

SPECIAL DATA FOR MODELS 45, 48 and 49 RECEIVERS

Trimmer adjustment frequencies are 175 KC, 600 KC and 1400 KC. The trimmer condensers on the model 45 receiver are located in the rear right hand corner of the chassis looking at the chassis from the front. Two of the IF trimmers are on the right hand side, near the rear and the third trimmer condenser (IF) is that most distant from the right hand rear corner of the chassis. The trimmer upon the rear of the chassis, near the right hand corner is the oscillator series condenser.

In the models 48 and 49, the oscillator series condenser control is accessible from the top of the chassis, on the left end of the chassis to the left of the shields. The four IF trimmers are accessible through the rear of the chassis, one the left end, looking at the chassis from the front.

The suggested output meter is of the type suitable for connection across the speaker voice coil. The 1st detector control grid must be disconnected for the IF trimmer adjustments and the oscillator "A" lead is connected to the 1st detector control grid cap upon the tube.

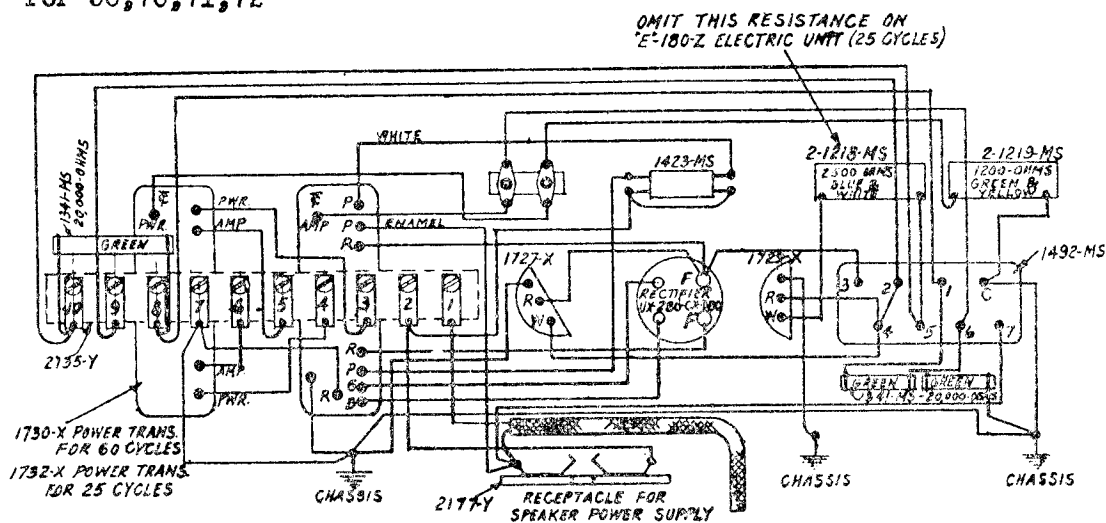
The variable gang condenser compensators for the model 45 are located on top of their respective tuning condenser sections. They can be adjusted with a screw driver. The compensator adjusting screws are at ground potential. The adjustment is made at 1400 KC without disturbing the main tuning sections. The suggestion is made to connect the antenna circuit of the receiver through a dummy antenna or a 250 mmfd condenser. The oscillator series condenser is adjusted at 600 KC

The main tuning condenser compensators are located at the top of their main tuning sections in the 48 and 49 models. They can be adjusted with a screw driver and since the screws are at ground potential and insulated screw driver is not required. There are four holes in the overall condenser and tube housing cover. The screw driver is inserted through these holes.

The tuning condenser compensators are adjusted at 1400 KC. The oscillator series condenser is adjusted at 600 KC. The intermediate trimmers are adjusted at 175 KC. Due to the physical location of the oscillator series condenser it is permissible to remove the overall condenser and tube shield housing cover to permit the insertion of the standard #4 socket wrench for adjustment purposes.

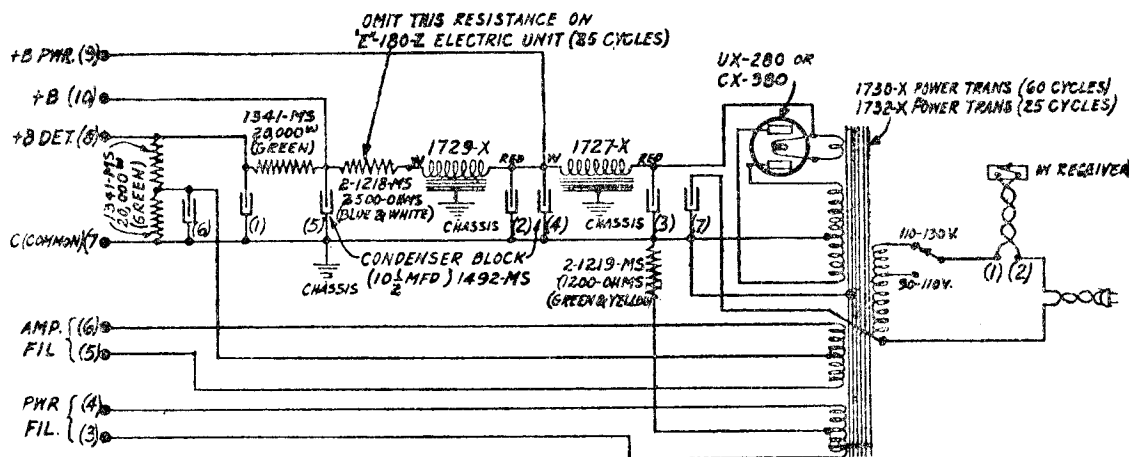
The suggestion is made to check the 175 KC adjustment of the test oscillator by beating that signal against one of its harmonics represented by the carrier frequency of a broadcasting station of correct frequency which is tuned in with the receiver operated in normal manner. Some of the harmonics of a 175 KC signal are 1400 KC., 1225 KC., 1050 KC., 875 KC., and 700 KC.

MODEL E-180, E-180Z
 Electric Unit FADA RADIO & ELECTRIC CORP.
 for 50, 70, 71, 72



ACTUAL WIRING DIAGRAM OF E-180 & E-180-Z ELECTRIC UNIT

Nor should it be a difficult matter to keep in mind that all "E-180" sets can be identified by their having two round cans in the "rear row" (the power pack). This immediately identifies the set as requiring a 280 rectifier tube and type 171-A amplifier tubes.



SCHEMATIC WIRING DIAGRAM OF E-180 & E-180-Z ELECTRIC UNIT

ELECTRICAL VALUES

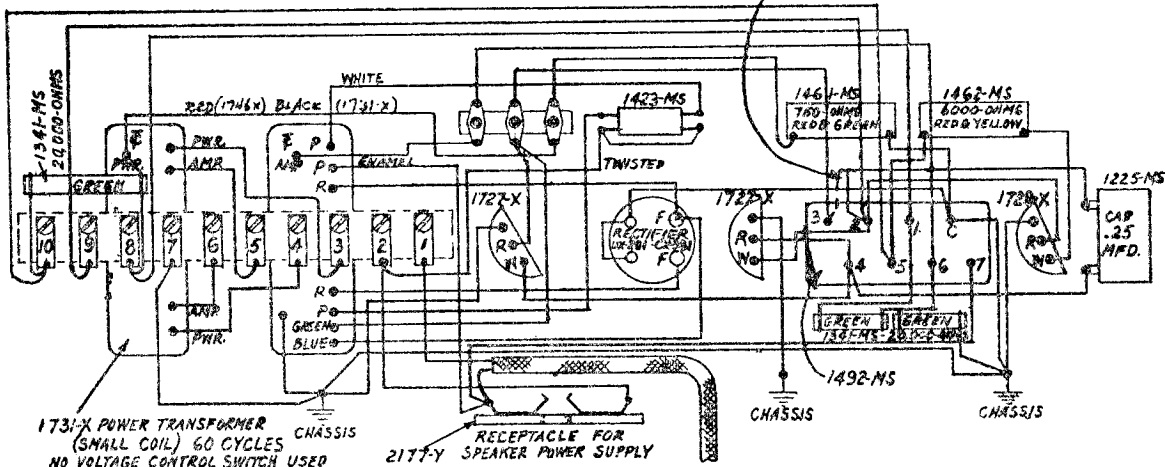
ELECTRIC UNIT TYPE E-180

- 1225-MS .25 mfd 400 volts
- 1341-MS carbon 20,000 ohms (green)
- 1461-MS wire 750 ohms red-green
- 1462-MS wire 6000 ohms red-yellow
- 1492-MS condenser block 10.5 mfd
- 2-1218-MS wire 2500 ohms blue-white
- 2-1219-MS wire 1200 ohms green-yellow
- 1727-X choke 600 ohms
- 1729-X choke 3500 ohms

FADA RADIO & ELECTRIC CORP.

MODEL E-420, E-420Z
Electric Unit
for 50, 60, 71, 72

CONNECT *1225-MS-.25 MFD CONDENSER TO *3 LUG FOR 1731-X POWER TRANS, AND CONNECT *1225-MS TO *2 LUG FOR 1746-X POWER TRANSFORMER.

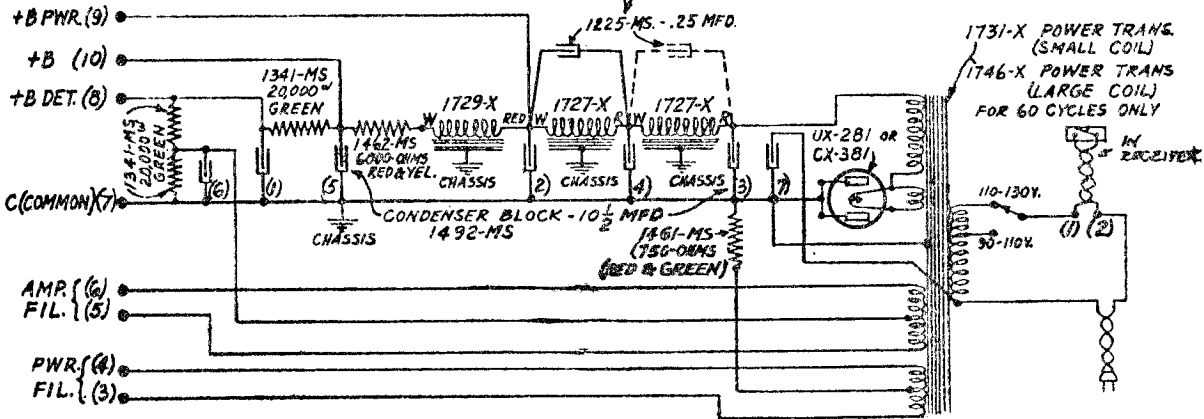
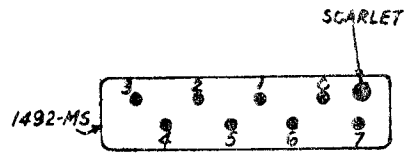


1731-X POWER TRANSFORMER (SMALL COIL) 60 CYCLES CHASSIS NO VOLTAGE CONTROL SWITCH USED
1746-X POWER TRANSFORMER (LARGE COIL) 60 CYCLES VOLTAGE CONTROL SWITCH USED

ACTUAL WIRING DIAGRAM OF 'E-420' ELECTRIC UNIT

Now it should not be a difficult matter to keep in mind that all "E-420" sets can be identified by their having three round cans in the "rear row" (the power pack). This immediately identifies the set as requiring a 281 rectifier tube and type 210 amplifier tubes.

CONNECT 1225-MS-.25 MFD. CONDENSER ACROSS 1ST CHOKE FOR 1731-X POWER TRANS. AND CONNECT ACROSS 2ND CHOKE FOR 1746-X POWER TRANSFORMER (AS SHOWN BY BROKEN LINES)



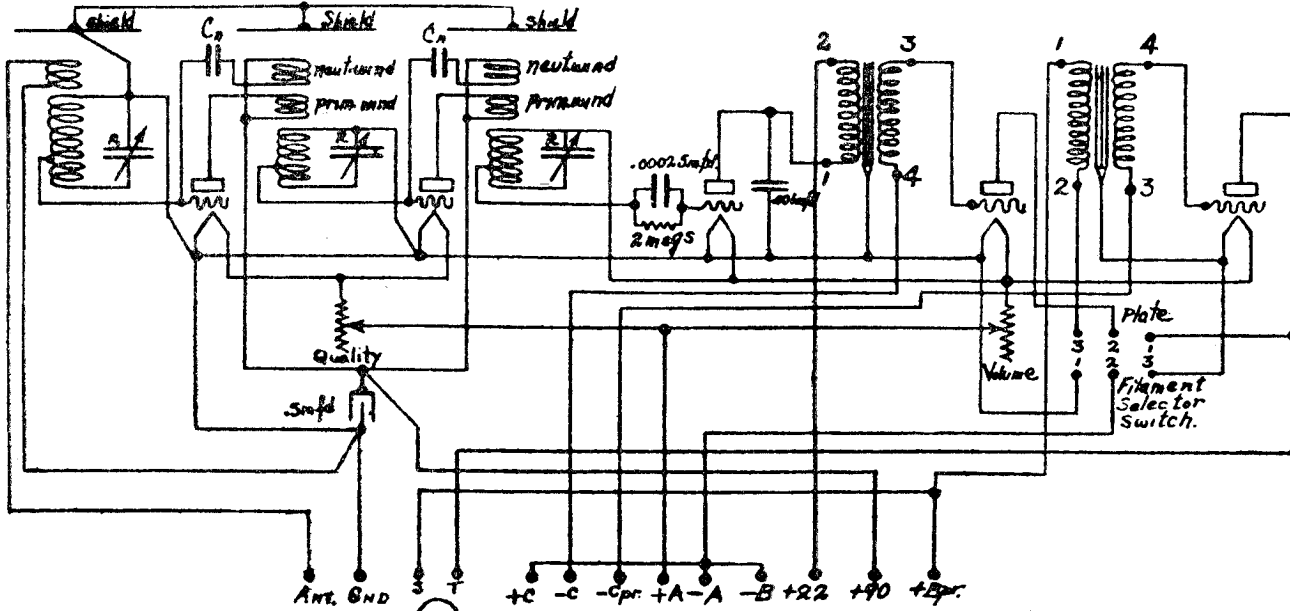
SCHEMATIC WIRING DIAGRAM OF "E-420" ELECTRIC UNIT.

ELECTRICAL VALUES
ELECTRIC UNIT TYPE E-420

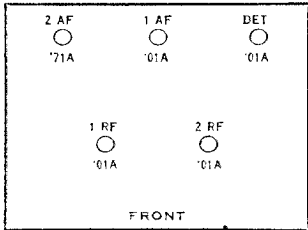
1225-MS	.25 mfd 400 volts	2-1218-MS	wire 2500 ohms blue-white
1341-MS	carbon 20,000 ohms green	2-1219-MS	wire 1200 ohms green-yellow
1461-MS	wire 750 ohms red-green	1727-X	choke 600 ohms
1462-MS	wire 6000 ohms red-yellow	1729-X	choke 3500 ohms
1492-MS	condenser block 10.5 mfd		

MODEL 192-A Receiver
 192-S
 192-BS Units
 MODEL 160 Neutrodyne

FADA RADIO & ELECTRIC CORP.

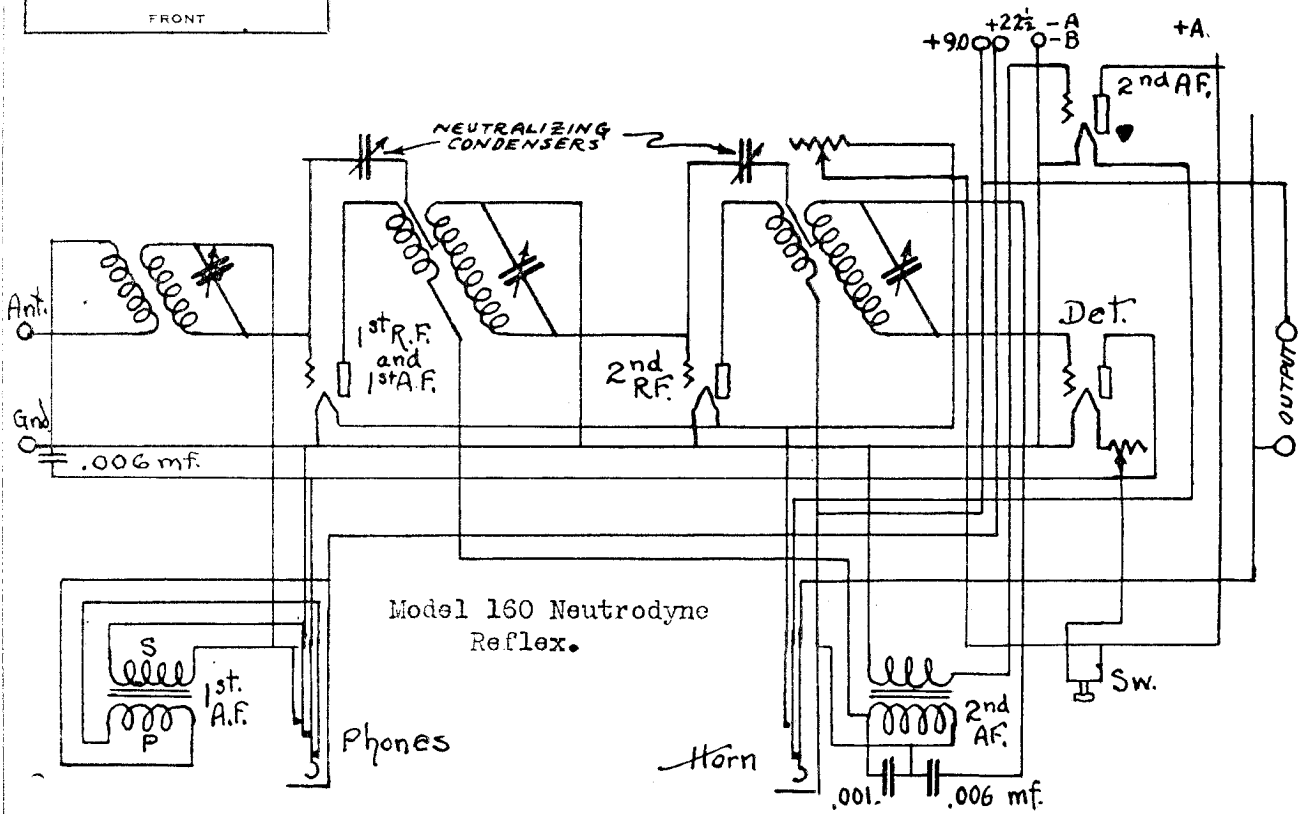


Model Fada's 170A, 192A



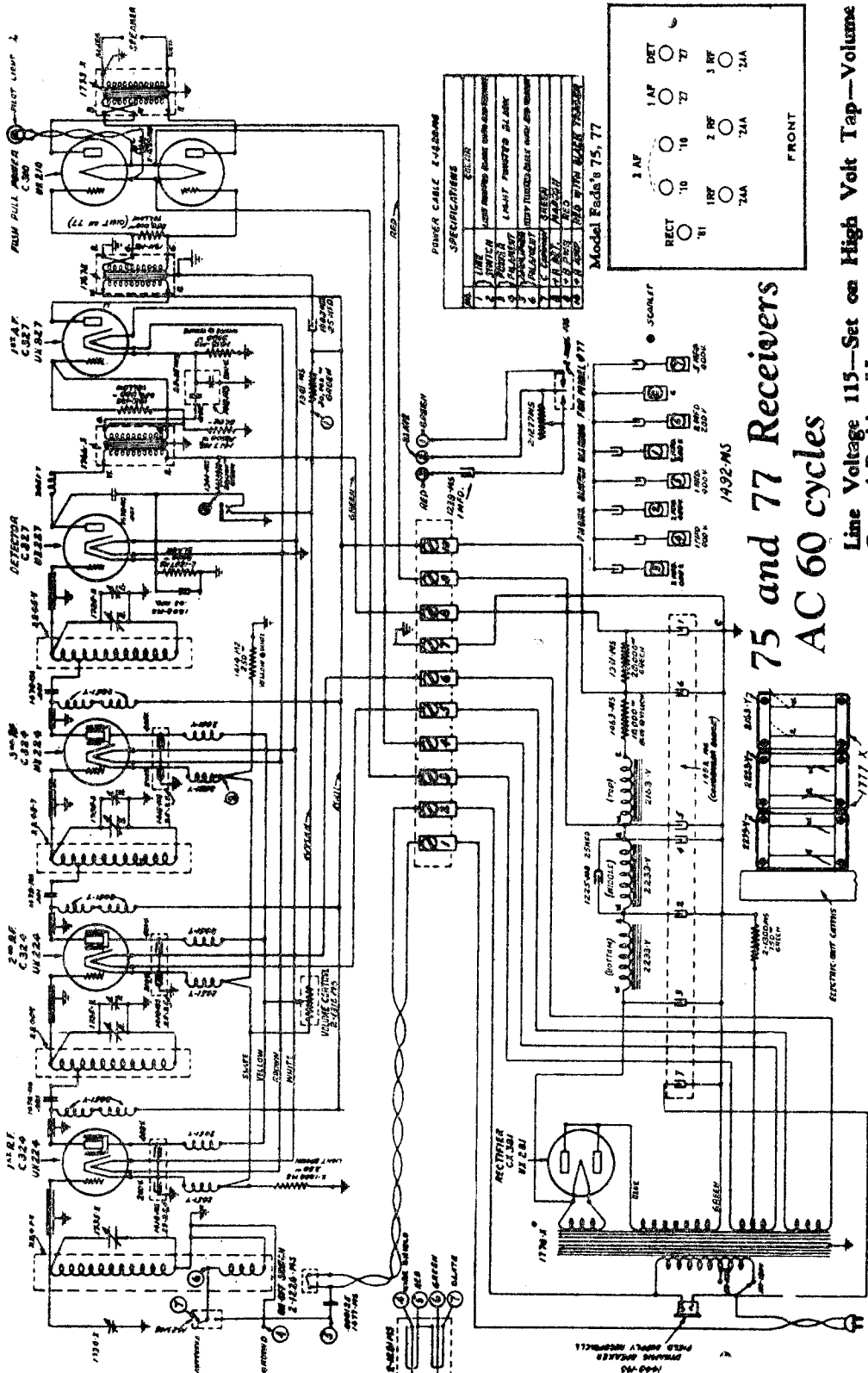
(Note S=Sleeve
 T=Tip
 connections to jack) 192-A Receiver, 192-S and 192 BS Units

Model 192-A Receiver, 192-S and 192-BS Units



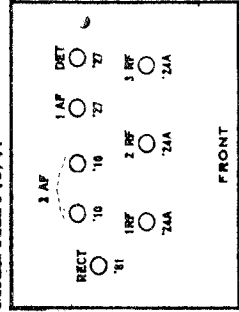
FADA RADIO & ELECTRIC CORP.

MODEL 75, 77 Schematic Voltage Notes



Model Fada's 75, 77

SPECIFICATIONS	
1	ANTENNA SWITCH
2	ANTENNA COIL
3	TUNING EYE
4	VARIABLE CONDENSER
5	1-4-47 TUNING CONTROL
6	1-4-47 TUNING CONTROL
7	1-4-47 TUNING CONTROL
8	1-4-47 TUNING CONTROL
9	1-4-47 TUNING CONTROL
10	1-4-47 TUNING CONTROL
11	1-4-47 TUNING CONTROL
12	1-4-47 TUNING CONTROL
13	1-4-47 TUNING CONTROL
14	1-4-47 TUNING CONTROL
15	1-4-47 TUNING CONTROL
16	1-4-47 TUNING CONTROL
17	1-4-47 TUNING CONTROL
18	1-4-47 TUNING CONTROL
19	1-4-47 TUNING CONTROL
20	1-4-47 TUNING CONTROL



75 and 77 Receivers AC 60 cycles

Line Voltage 115—Set on High Volt Tap—Volume Control Position Max
Note: When taking screen grid tube readings control grid should be grounded.

PARTS LIST		QUANTITY		DESCRIPTION	
1	1A5	1	1	RF	1A5
2	2A4	1	1	2nd RF	2A4
3	6X4	1	1	Detector	6X4
4	6AV6	1	1	AF	6AV6
5	6BE6	1	1	AF	6BE6
6	6BE6	1	1	AF	6BE6
7	6BE6	1	1	AF	6BE6
8	6BE6	1	1	AF	6BE6
9	6BE6	1	1	AF	6BE6
10	6BE6	1	1	AF	6BE6
11	6BE6	1	1	AF	6BE6
12	6BE6	1	1	AF	6BE6
13	6BE6	1	1	AF	6BE6
14	6BE6	1	1	AF	6BE6
15	6BE6	1	1	AF	6BE6
16	6BE6	1	1	AF	6BE6
17	6BE6	1	1	AF	6BE6
18	6BE6	1	1	AF	6BE6
19	6BE6	1	1	AF	6BE6
20	6BE6	1	1	AF	6BE6

COMPENSATING INSTRUCTIONS FOR MODELS 75 AND 77

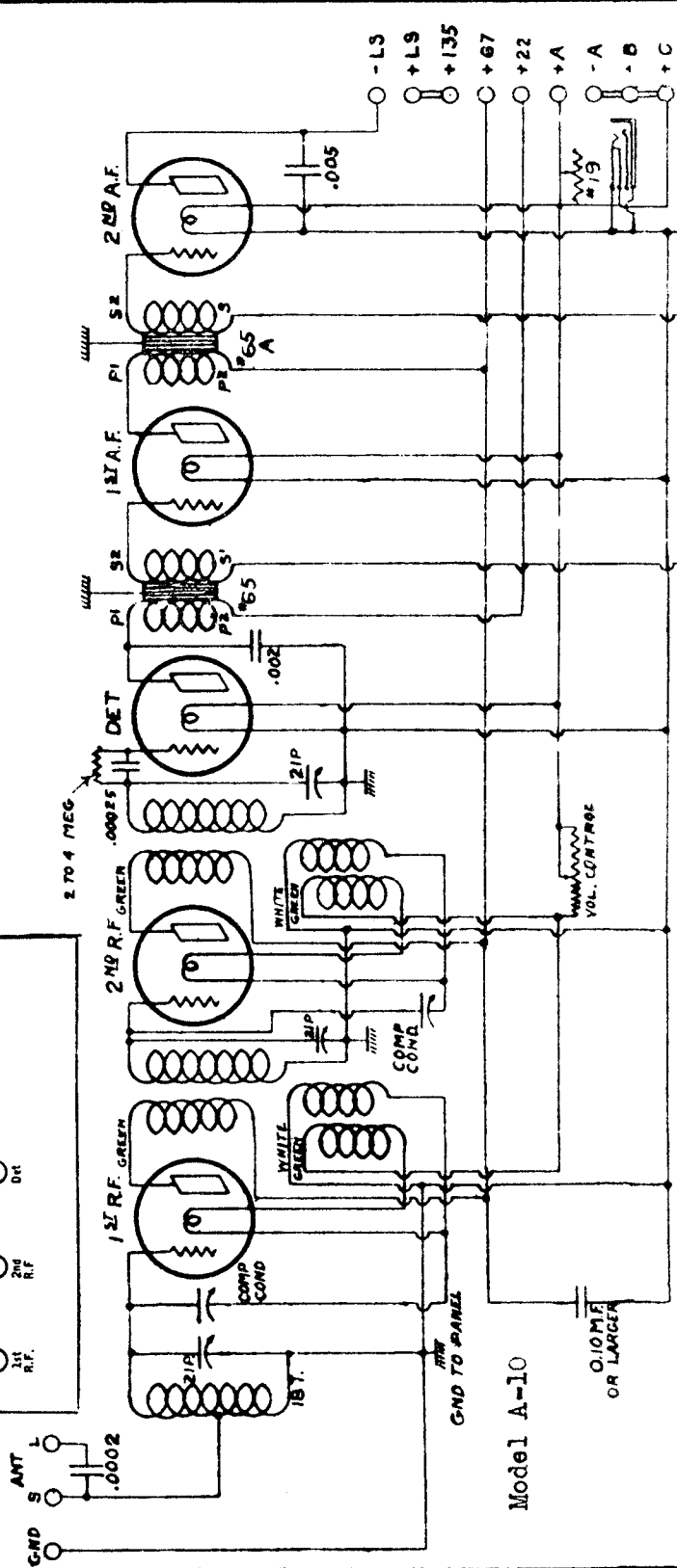
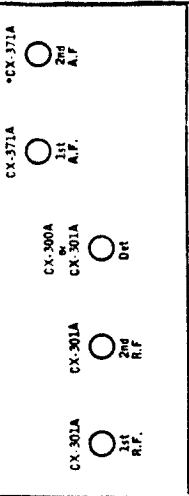
The compensating condenser is located beneath the small hole in the left side of each RF shield can (facing the front of the set) and may be adjusted with a screw driver. There is no compensating condenser in the shield can to the extreme left; its function being performed by the antenna vernier.

FEDERAL RADIO CORP.

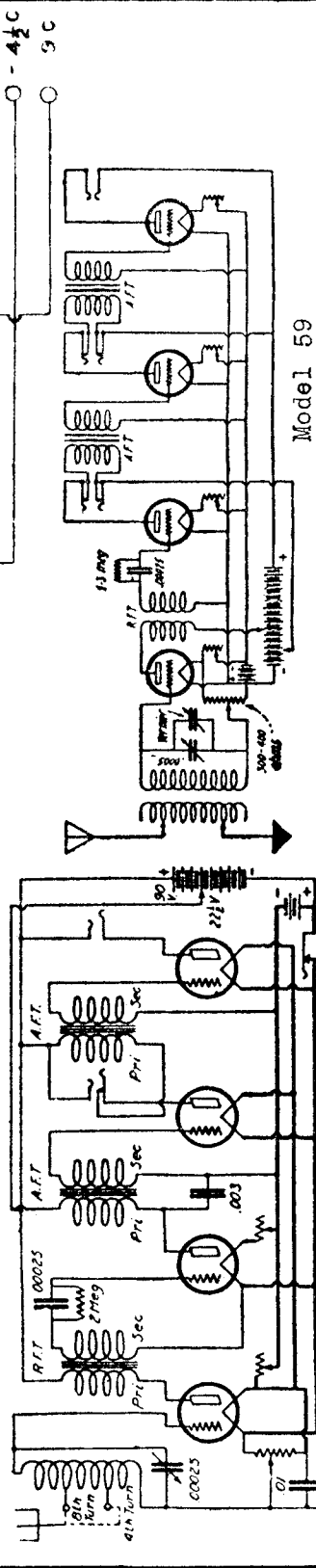
MODELS A-10, 59, 102
Schematic

(Batt.)

A-10



Model A-10

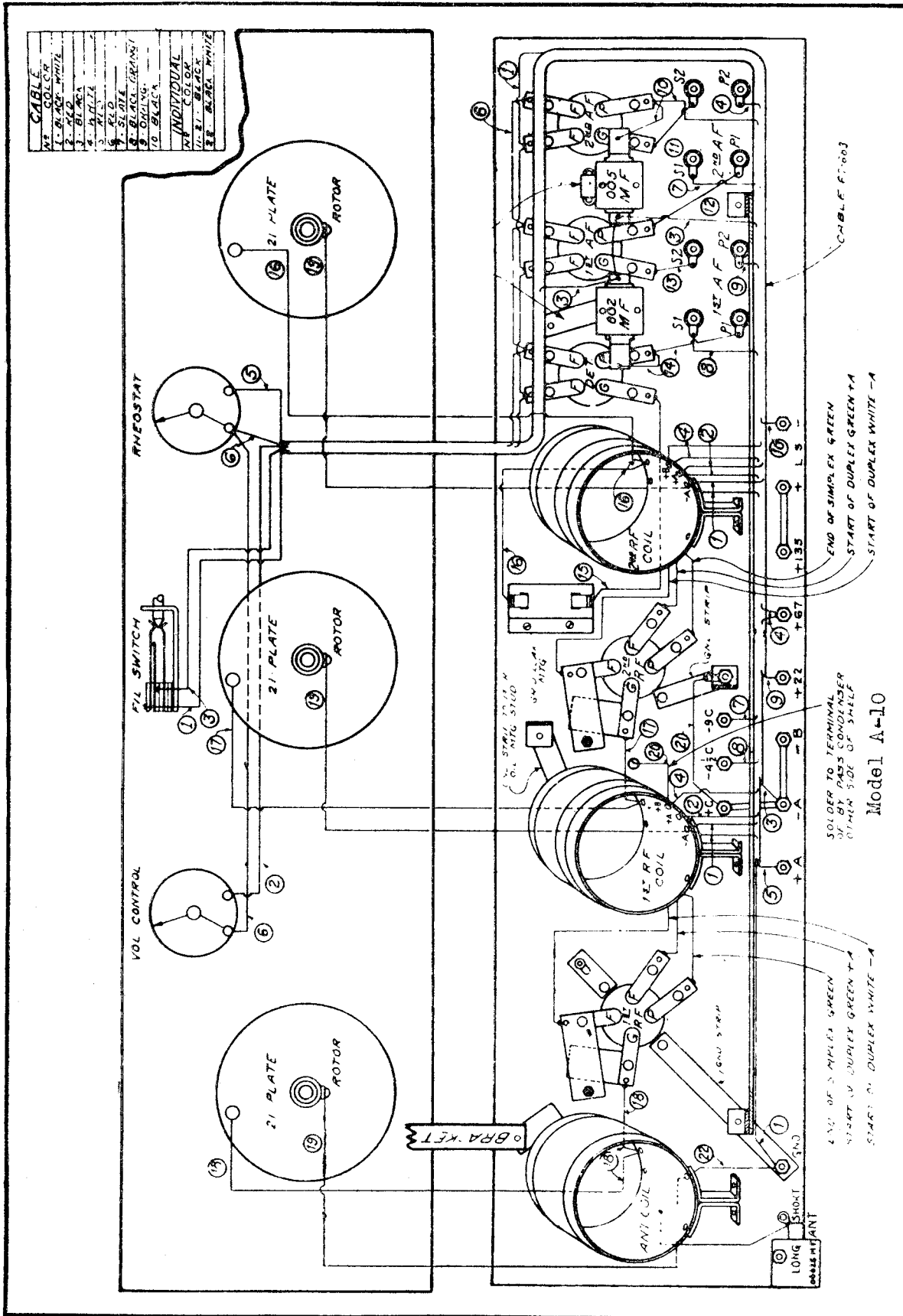


Model 59

Model 102

MODEL A-10
Wiring Diagram

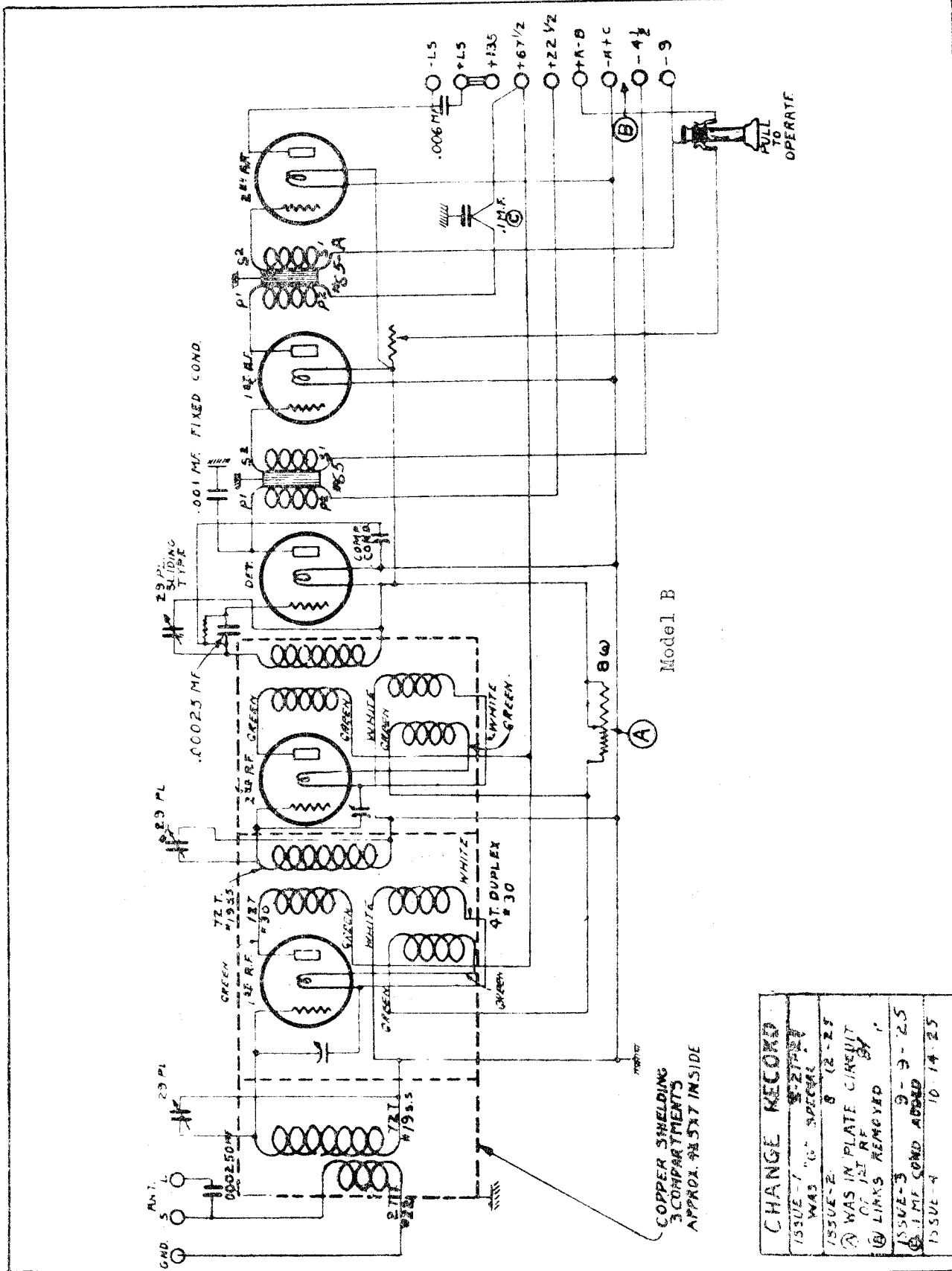
FEDERAL RADIO CORP.



Model A-10

FEDERAL RADIO CORP.

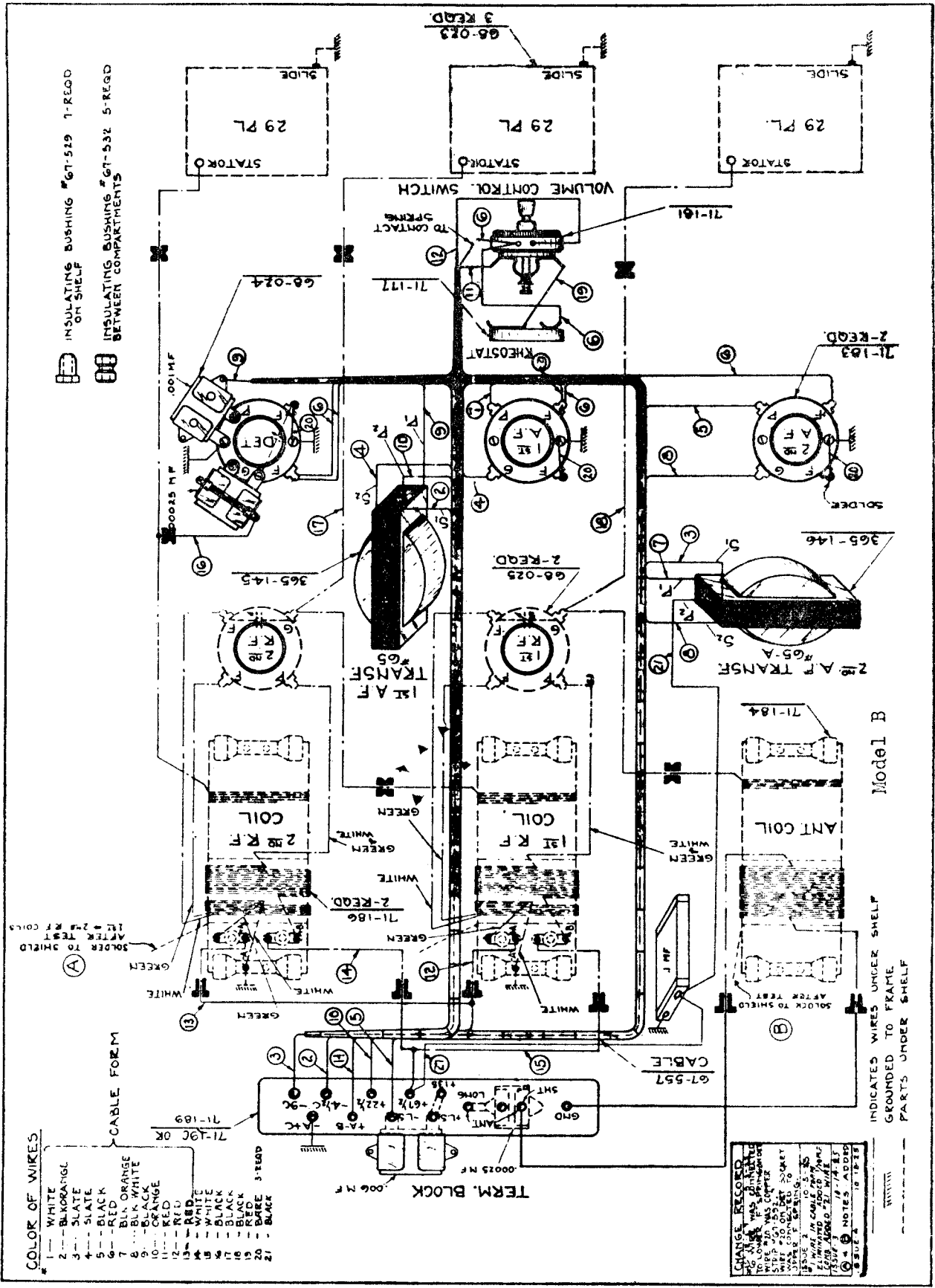
MODEL B
Schematic



CHANGE RECORD	
ISSUE-1	SPECIAL
ISSUE-2	8 (2-25)
A WAS IN PLATE CIRCUIT OF 1ST RF	
B LINKS REMOVED	
ISSUE-3	9-9-25
C .1 MF COND ADDED	
ISSUE-4	10-14-25

MODEL B
Wiring Diagram

FEDERAL RADIO CORP.



COLOR OF WIRES

1	WHITE
2	BK ORANGL
3	SLATE
4	BLACK
5	BLACK
6	BK ORANGE
7	BK WHITE
8	BLACK
9	ORANGE
10	RED
11	RED
12	RED
13	RED
14	WHITE
15	BLACK
16	BLACK
17	BLACK
18	BLACK
19	BLACK
20	BLACK
21	BLACK

3-LEAD
5-LEAD

INSULATING BUSHING #GT-519 1-RECD ON SHELF

INSULATING BUSHING #GT-532 5-RECD BETWEEN COMPARTMENTS

CHANGE RECORD

THIS DRAWING WAS ORIGINALLY DESIGNED BY [Name] ON [Date] FOR [Project].

REVISIONS:

NO.	DATE	DESCRIPTION
1		AS DESIGNED
2		REVISED TO SHOW [Change]
3		REVISED TO SHOW [Change]
4		REVISED TO SHOW [Change]
5		REVISED TO SHOW [Change]

NOTES: [Additional notes regarding the drawing]

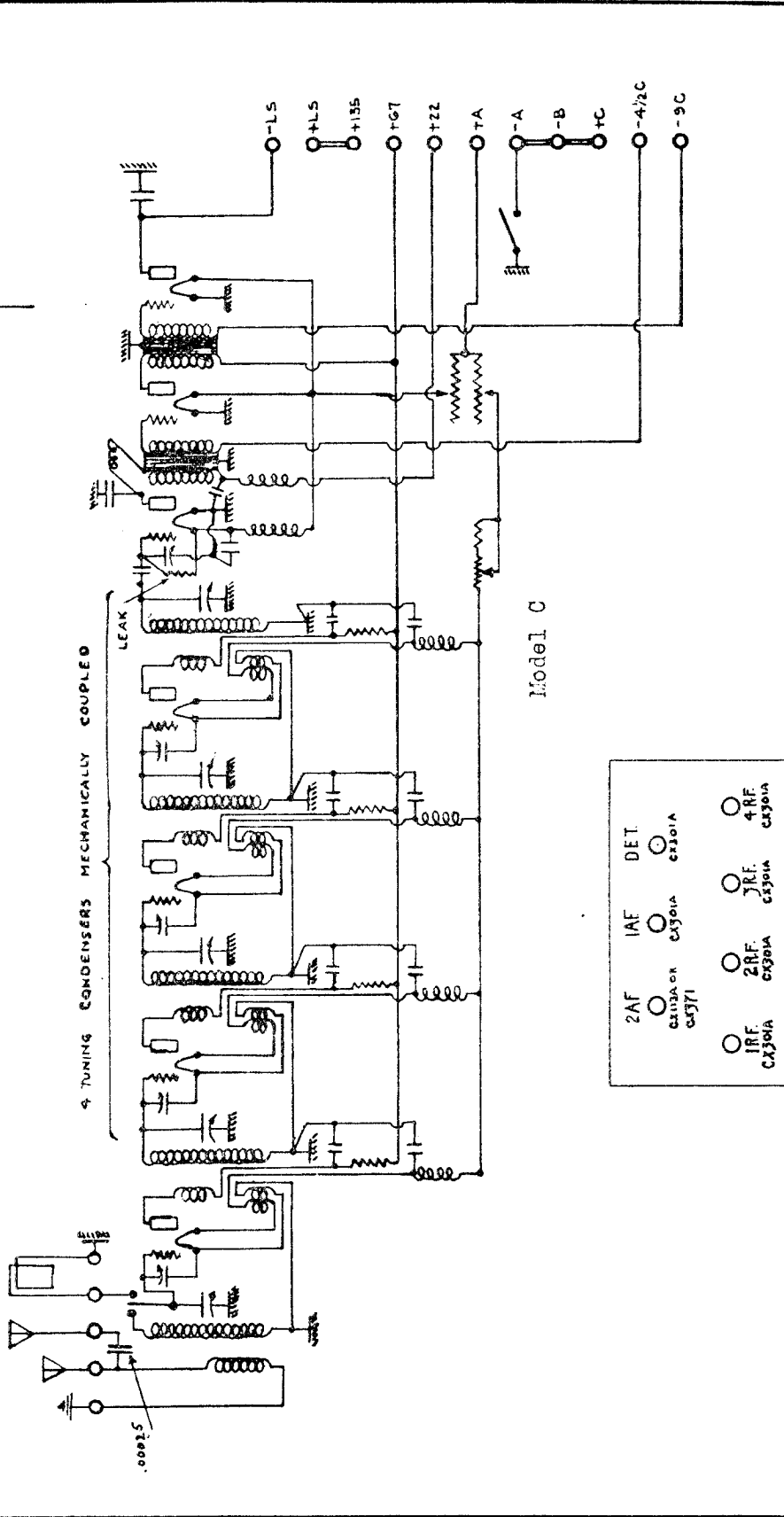
Model B

INDICATES WIRES UNDER SHELF
GROUNDED TO FRAME
PARTS UNDER SHELF

FEDERAL RADIO CORP.

MODEL C
Schematic

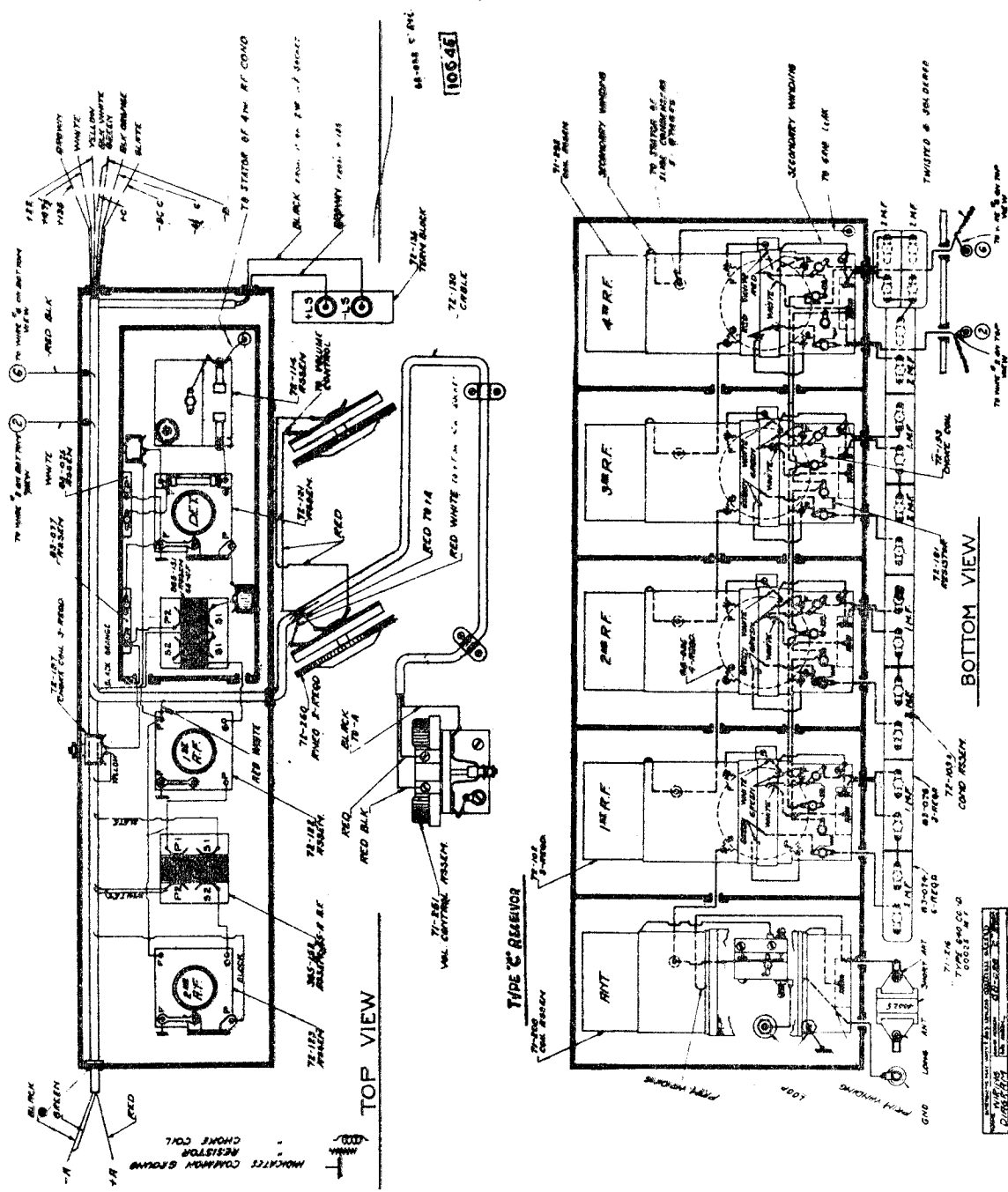
CHANGE RECORD
 ISSUE 2 12-11-25
 ADDED 7 CHOKE COILS
 ADDED 4 RESISTORS
 ADDED 1/10 MUF. CONDENSER
 RE-LOCATED GRID LEAK +
 ISSUE 3 4-14-26



SCHEMATIC DING 3954 DATED 10-19-25

MODEL C
Wiring Diagram

FEDERAL RADIO CORP.

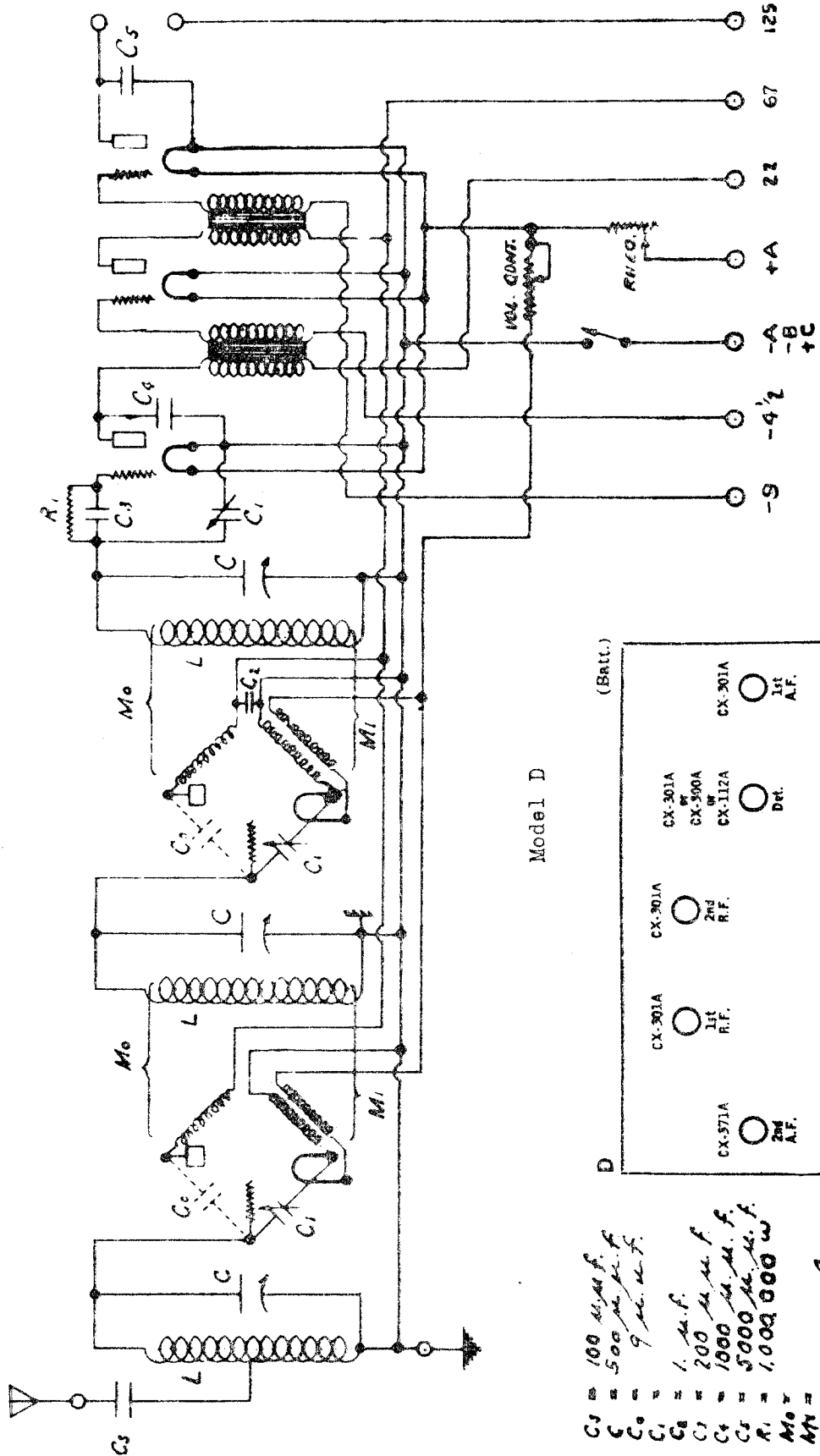


Model C

DATE	BY	CHKD	APP'D
10/15/44	J.P.	J.P.	J.P.
FEDERAL RADIO CORP.			
MONTICELLO, N.Y.			
1064			

FEDERAL RADIO CORP.

MODEL D, CODE 68-070
Schematic



Model D

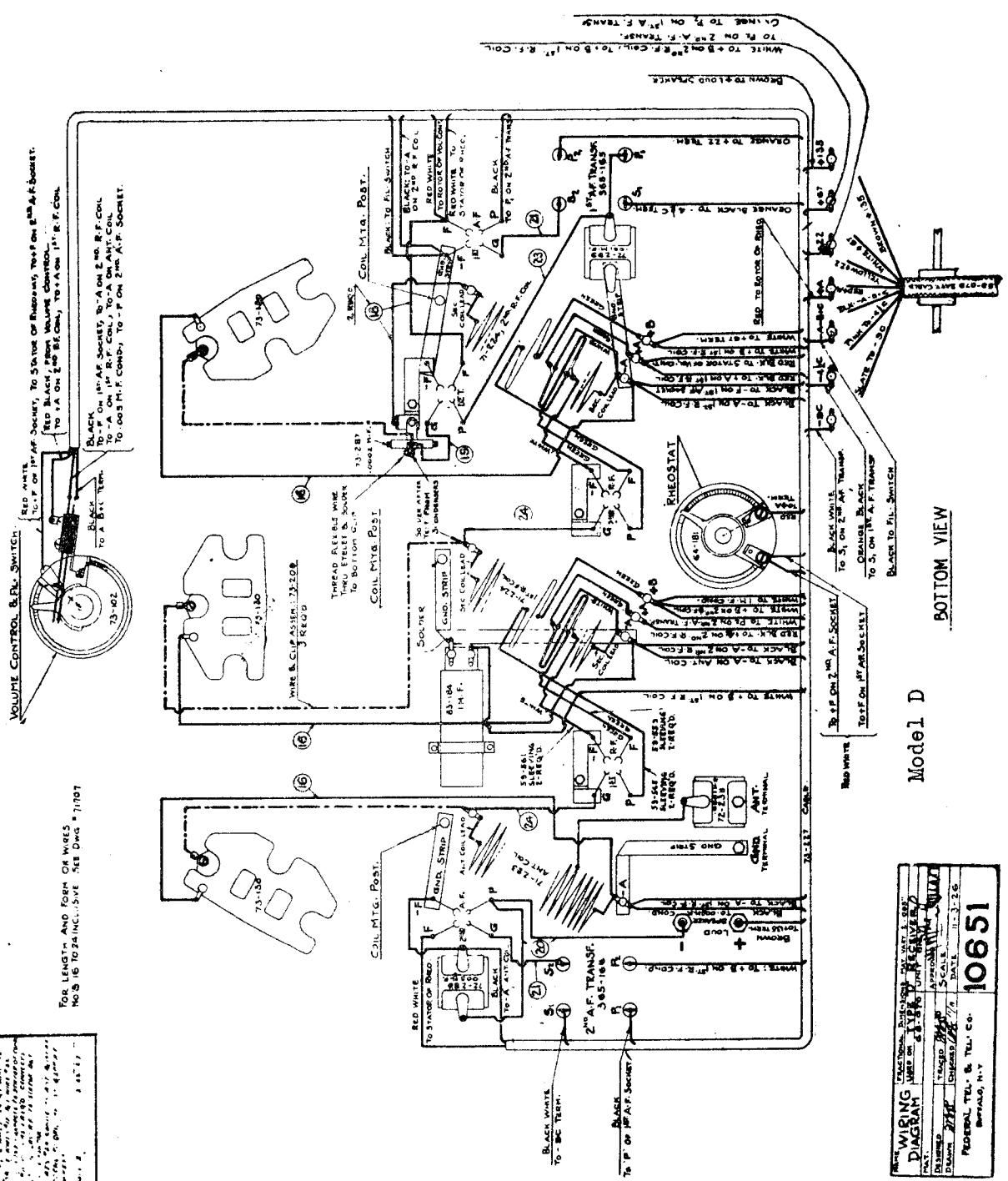
(Batt.)

CX-301A	CX-301A	CX-301A	CX-301A
1st R.F.	1st R.F.	2nd R.F.	2nd A.F.
or	or	or	or
CX-590A	CX-112A	Det.	CX-571A
or	or	or	1st A.F.
CX-301A			

- C3 = 100 μm.f.
- C = 500 μm.f.
- C0 = 9 μm.f.
- C1 = 1 μm.f.
- C2 = 200 μm.f.
- C4 = 1000 μm.f.
- C5 = 5000 μm.f.
- R1 = 1,000,000 Ω
- M0 =
- M1 =
- L = 165 μh.

MODEL D, Battery
Wiring Diagram

FEDERAL RADIO CORP.



CHANGE RECORD

NO.	DATE	DESCRIPTION
1	11-2-35	...
2	11-2-35	...
3	11-2-35	...
4	11-2-35	...
5	11-2-35	...
6	11-2-35	...
7	11-2-35	...
8	11-2-35	...
9	11-2-35	...
10	11-2-35	...
11	11-2-35	...
12	11-2-35	...
13	11-2-35	...
14	11-2-35	...
15	11-2-35	...
16	11-2-35	...
17	11-2-35	...
18	11-2-35	...
19	11-2-35	...
20	11-2-35	...

TOP LENGTH AND FORM OF WIRE
NO. 16 TO 22 INCLUSIVE SEE DWG. # 11907

WIRING DIAGRAM

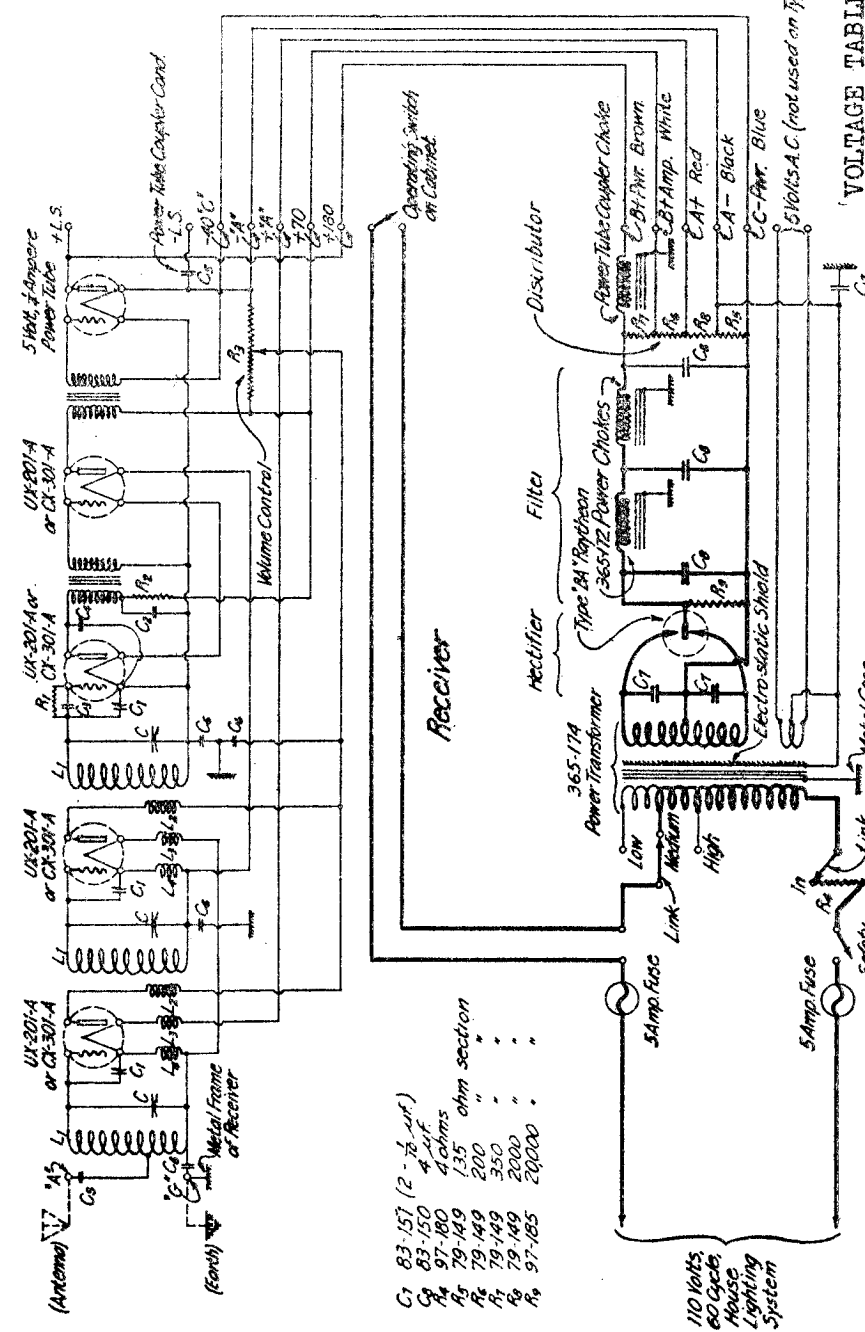
DATE	11-2-35
DESIGNED BY	...
DRAWN BY	...
CHECKED BY	...
DATE	11-2-35
SCALE	...
FEDERAL TEL. & TEL. CO.	10651
BUFFALO, N.Y.	

Model D
BOTTOM VIEW

FEDERAL RADIO CORP.

MODEL D CODE 79-070 Schematic

- C₁ 73-130 Balance Cond
- C₂ 83-184 1 uF
- C₃ 73-287 1.0002 uF
- C₄ 72-293 .001 "
- C₅ 83-195 .4 uF
- C₆ 83-189 and 83-190 .5 uF each
- C₇ 72-238 .002 uF
- A₁ 1 Meg ohm (not shown on 10667)
- A₂ 97-176 150,000 ohms
- A₃ 79-155 50,000 ohms
- L₁ 71-223 and 79-124
- L₂ Plate Coil (Green, Single Winding)
- L₃ + F Coil (Green, Double Winding)
- L₄ - F Coil (White, Double Winding)



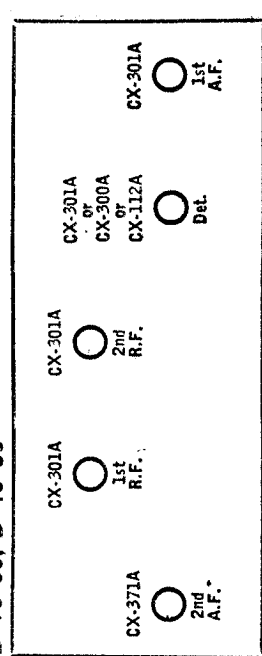
- C₁ 83-157 (2 - 78 uF)
- C₂ 83-150 4 uF
- A₁ 97-180 1.35 ohm section
- A₂ 79-149 200 "
- A₃ 79-149 550 "
- A₄ 79-149 2000 "
- A₅ 97-185 20000 "

VOLTAGE TABLE

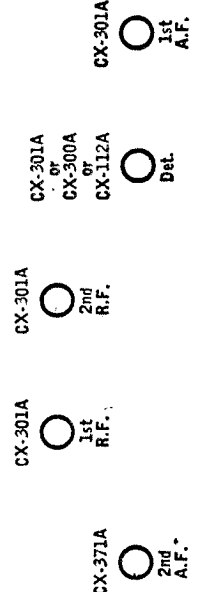
Plate voltages are measured between -F and the tube elements.

- 1st RF Plate 60 volts
 - 2nd RF Plate 65 volts
 - Detector Plate 21*volts
 - 1st AF Plate 70 volts
 - Output Plate 187 volts
- Measured with low resistance voltmeter. When high resistance meter is used, voltage may be 50 volts.

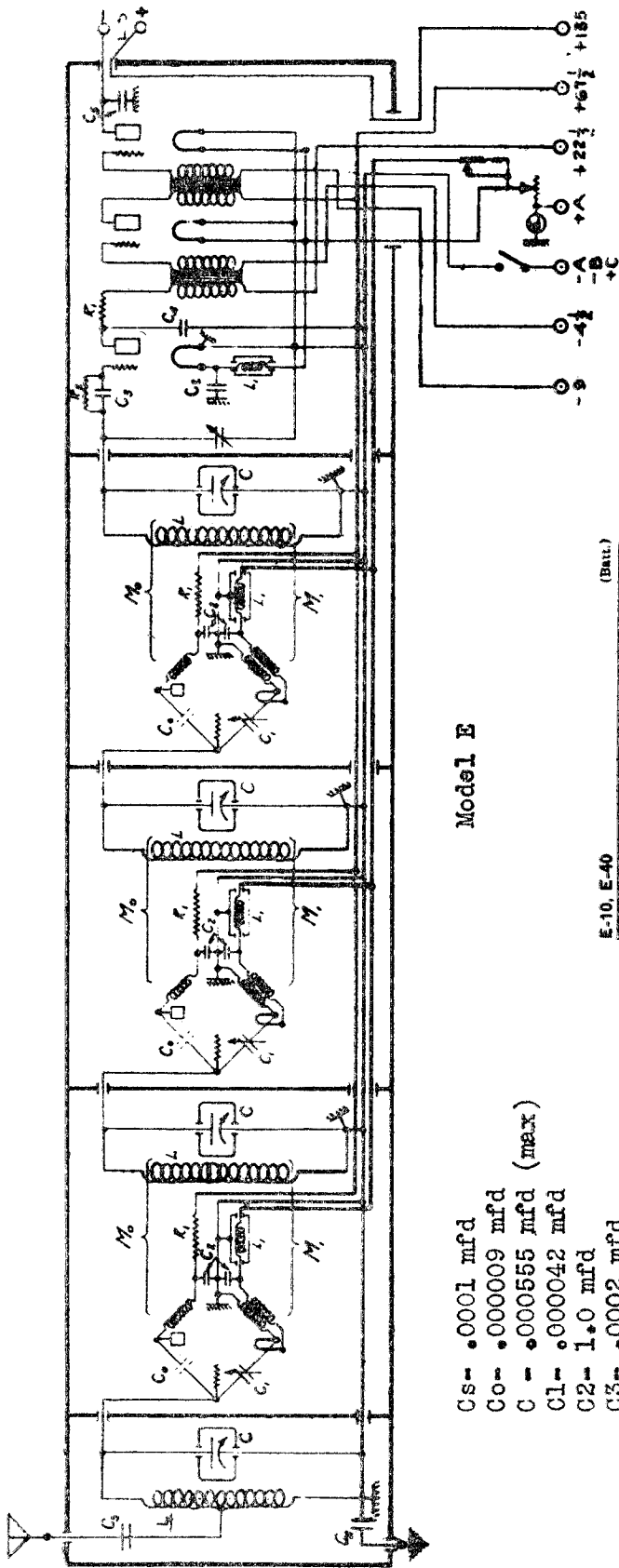
Model D



D-10-60, D-40-60



60 Cycle Power Supply Unit, Code 79-001



Model E

E-10, E-40 (Batt.)

6X-301A 6X-301A	6X-301A 6X-301A	6X-301A 6X-301A	6X-301A 6X-301A	6X-301A 6X-301A
6X-302A 6X-302A	6X-302A 6X-302A	6X-302A 6X-302A	6X-302A 6X-302A	6X-302A 6X-302A
6X-303A 6X-303A	6X-303A 6X-303A	6X-303A 6X-303A	6X-303A 6X-303A	6X-303A 6X-303A
6X-304A 6X-304A	6X-304A 6X-304A	6X-304A 6X-304A	6X-304A 6X-304A	6X-304A 6X-304A
6X-305A 6X-305A	6X-305A 6X-305A	6X-305A 6X-305A	6X-305A 6X-305A	6X-305A 6X-305A
6X-306A 6X-306A	6X-306A 6X-306A	6X-306A 6X-306A	6X-306A 6X-306A	6X-306A 6X-306A
6X-307A 6X-307A	6X-307A 6X-307A	6X-307A 6X-307A	6X-307A 6X-307A	6X-307A 6X-307A
6X-308A 6X-308A	6X-308A 6X-308A	6X-308A 6X-308A	6X-308A 6X-308A	6X-308A 6X-308A
6X-309A 6X-309A	6X-309A 6X-309A	6X-309A 6X-309A	6X-309A 6X-309A	6X-309A 6X-309A
6X-310A 6X-310A	6X-310A 6X-310A	6X-310A 6X-310A	6X-310A 6X-310A	6X-310A 6X-310A

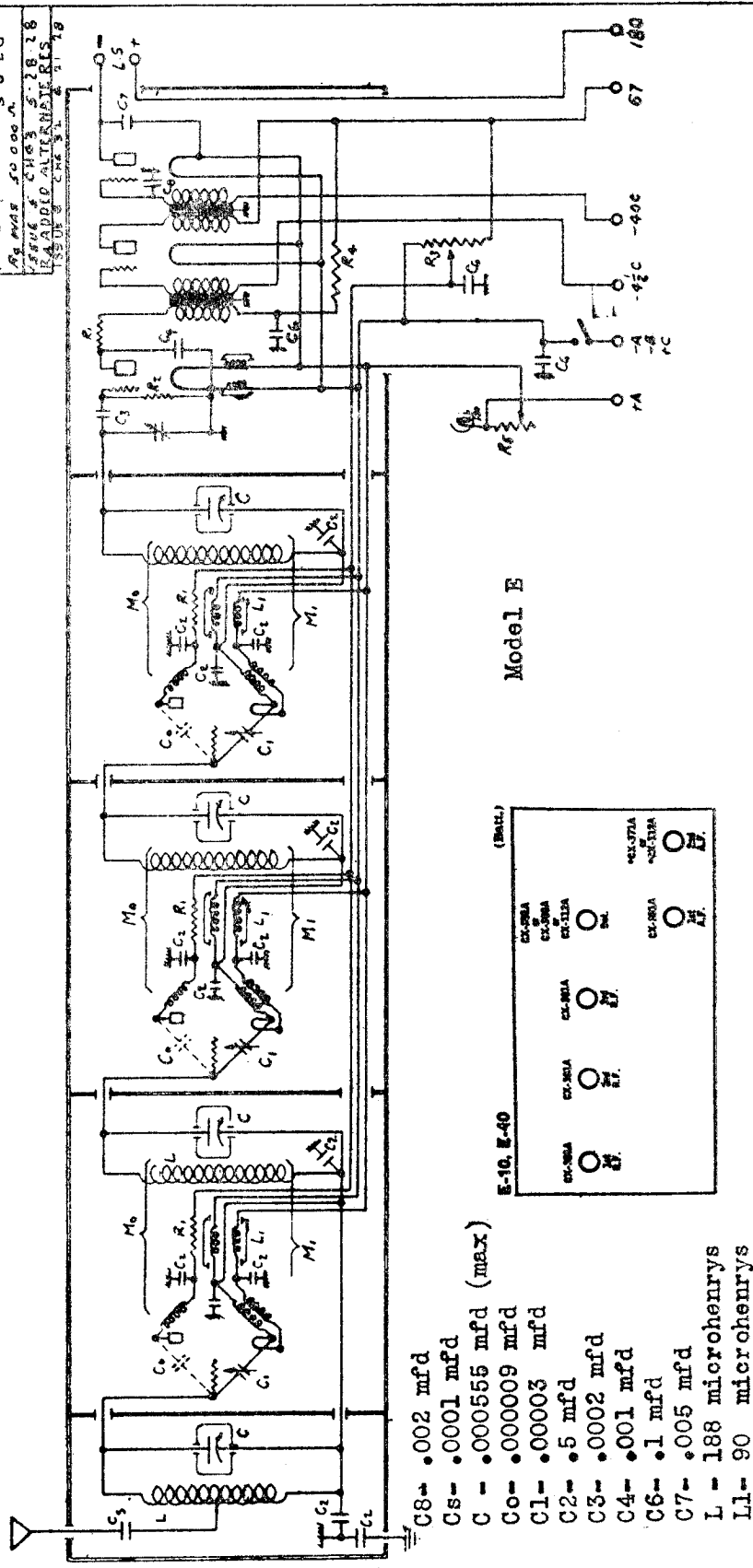
- Cs - .0001 mfd
- C0 - .000009 mfd (max)
- C - .000555 mfd
- C1 - .000042 mfd
- C2 - 1.0 mfd
- C3 - .0002 mfd
- C4 - .001 mfd
- C5 - .005 mfd
- M0 - 25.5 microhenrys
- M1 - 5.25 microhenrys
- R1 - 200 ohms (low capacity)
- R2 - 1.0 megohm
- L - 100 microhenry
- L1 - 360 microhenry

MODEL E DC
Schematic

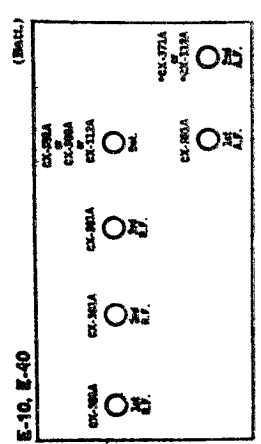
FEDERAL RADIO CORP.

CHANGE RECORD

ISSUE 1	100,000,000	27
ISSUE 2	100,000,000	77
ISSUE 3	100,000,000	ADDED
ISSUE 4	100,000,000	2, 21, 28
ISSUE 5	100,000,000	PL
ISSUE 6	100,000,000	3-8-28
ISSUE 7	100,000,000	5-28-28
ISSUE 8	100,000,000	ADDED ALTERNATES
ISSUE 9	100,000,000	2-1-29



Model E



- C8 = .002 mfd
- C5 = .0001 mfd
- C = .000555 mfd (max)
- C0 = .000009 mfd
- C1 = .00003 mfd
- C2 = .5 mfd
- C3 = .0002 mfd
- C4 = .001 mfd
- C6 = .1 mfd
- C7 = .005 mfd
- L = 188 microhenrys
- L1 = 90 microhenrys
- R1 = 200 ohms
- R2 = 1.0 megohm
- R3 = 50,000 ohms
- R4 = 20,000 ohms for dynamic
- R4 = 50,000 ohms for magnetic

DESIGNED FOR 68-062

SUB ASBY

SCALE

RECEIVED

APPROVED

DATE

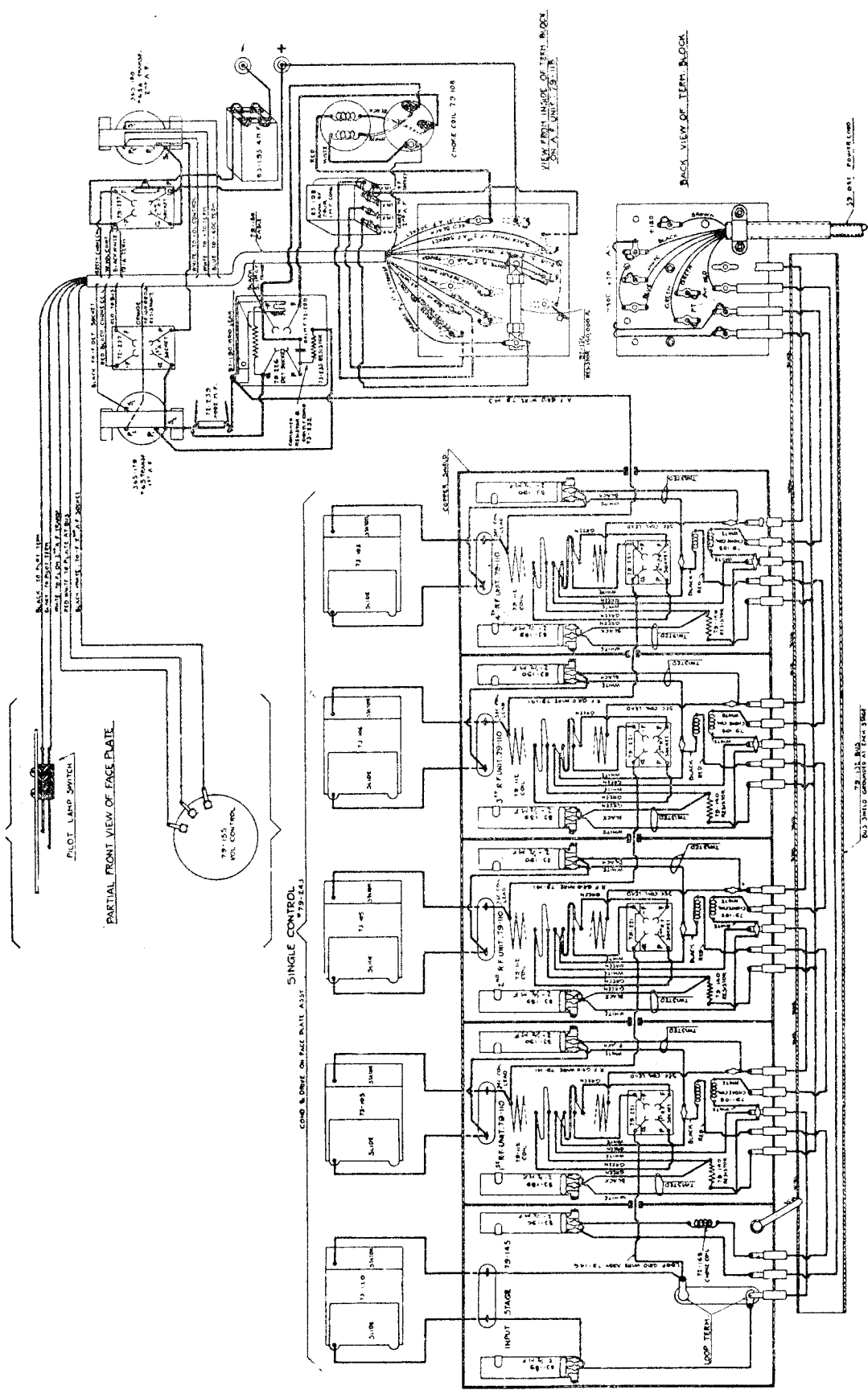
3978

FEDERAL TEL. MFG. CO.
ELIZABETH, N. Y.

3978

FEDERAL RADIO CORP.

MODEL F, CODE 79-080
Receiver Chassis



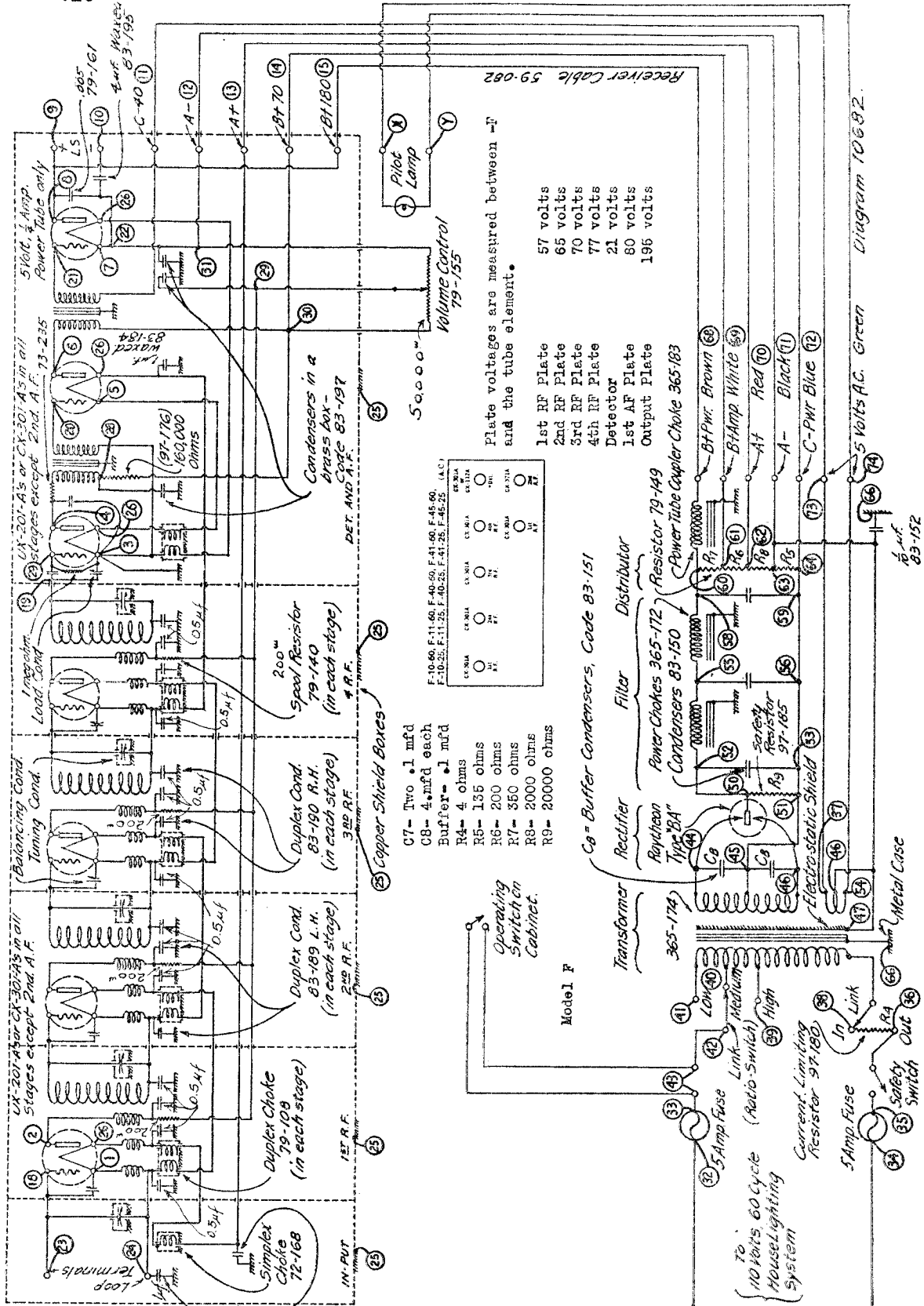
Model F Receiver View

For Power Unit Chassis Wiring
See Index

GROUND TO FRAME

MODEL F, CODE 79-080
Schematic

FEDERAL RADIO CORP.



Receiver Cable 59-082
Pilot Lamp
Volume Control 79-155

Plates voltages are measured between -F and the tube element.

57 volts
65 volts
70 volts
77 volts
21 volts
80 volts
196 volts

COPPER SHIELD BOXES

C7 - Two .1 mfd	C8 - 4 mfd each
Buffer - .1 mfd	R4 - 4 ohms
R5 - 135 ohms	R6 - 200 ohms
R7 - 350 ohms	R8 - 2000 ohms
R9 - 20000 ohms	

Co = Buffer Condensers, Code 83-151

83-189 with its 2 sections connecting in parallel.
83-190 with its 2 sections connecting in parallel.

Diagram 10682

5 Volts A.C. Green

10 A.F. 83-152

To 100 Volts, 60 Cycle House Lighting System

Operating Switch on Cabinet.

Model F

Metal Case

5 Amp Fuse

5 Amp Fuse

Current Limiting Resistor 97-180

5 Amp Fuse (Radio Switch)

Link

In Link

Out Link

Safety Switch

Safety Switch

Transformer 365-174

Rectifier Raytheon Type 6A

Filter Power Chokes 365-172

Distributor Resistor 79-149

Capacitors 83-150

Power Tube Capper Choke 365-183

Resistor 97-185

Resistor 97-165

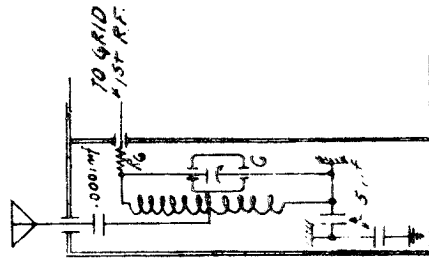
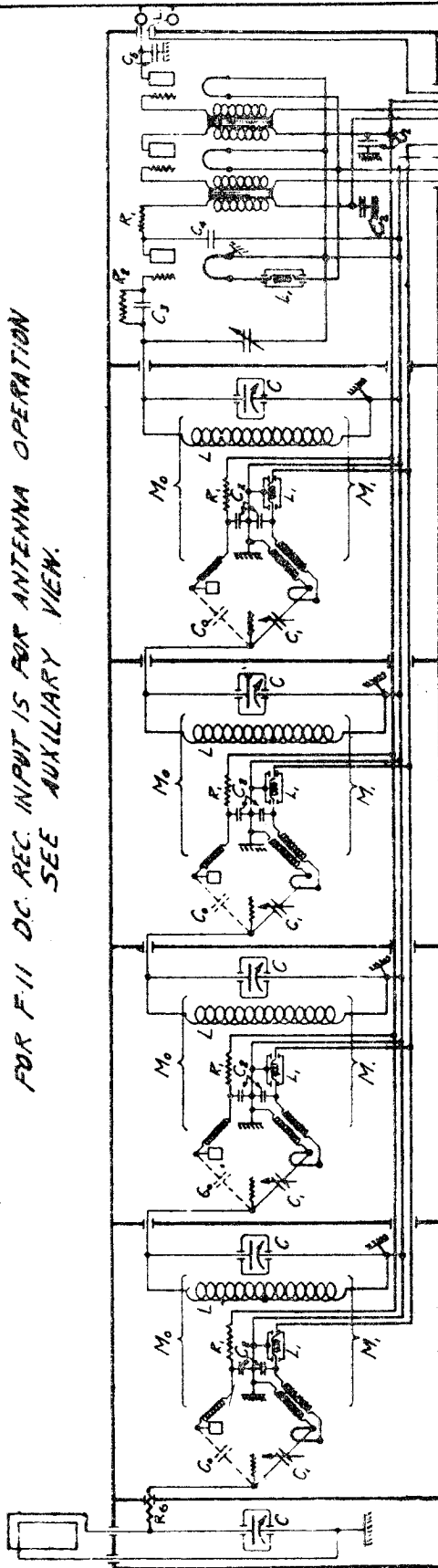
Electrostatic Shield

5 Volts A.C. Green

FEDERAL RADIO CORP.

MODEL F-10 DC
F-11 DC

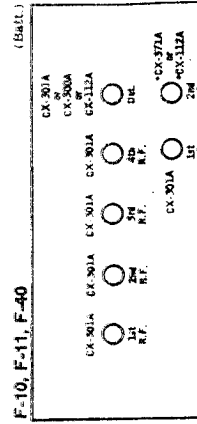
NOTE FOR F-10 DC REC INPUT IS FOR LOOP OPERATION AS SHOWN
FOR F-11 DC REC INPUT IS FOR ANTENNA OPERATION
SEE AUXILIARY VIEW.



Model F

- L = 100 μH
- C = 565 μMF (MAX)
- C₁ = 5
- C₂ = 42
- M₀ = 85.5 μH
- M₁ = 5.75 μH
- C₃ = 1 μF
- M₂ = 200 Ω (VERY LOW CAPACITANCE)
- M₃ = 1,000,000 Ω
- C₄ = 200 μMF
- C₅ = 5,000 μMF
- L₁ = 360 μH
- C₆ = 2 μF
- R₆ = 500 Ω

1.2.5 U.S. 4 10-3 28
ANT UNIT ADDED FOR F-11 DC
ISSUED-3 8-21-28
ADDED R₆ TO LOOP STAGE
SUB-2 11-10-28
C₄ change from 100 μF to 200 μF
R₆ added to 22k lead. 11/15/28



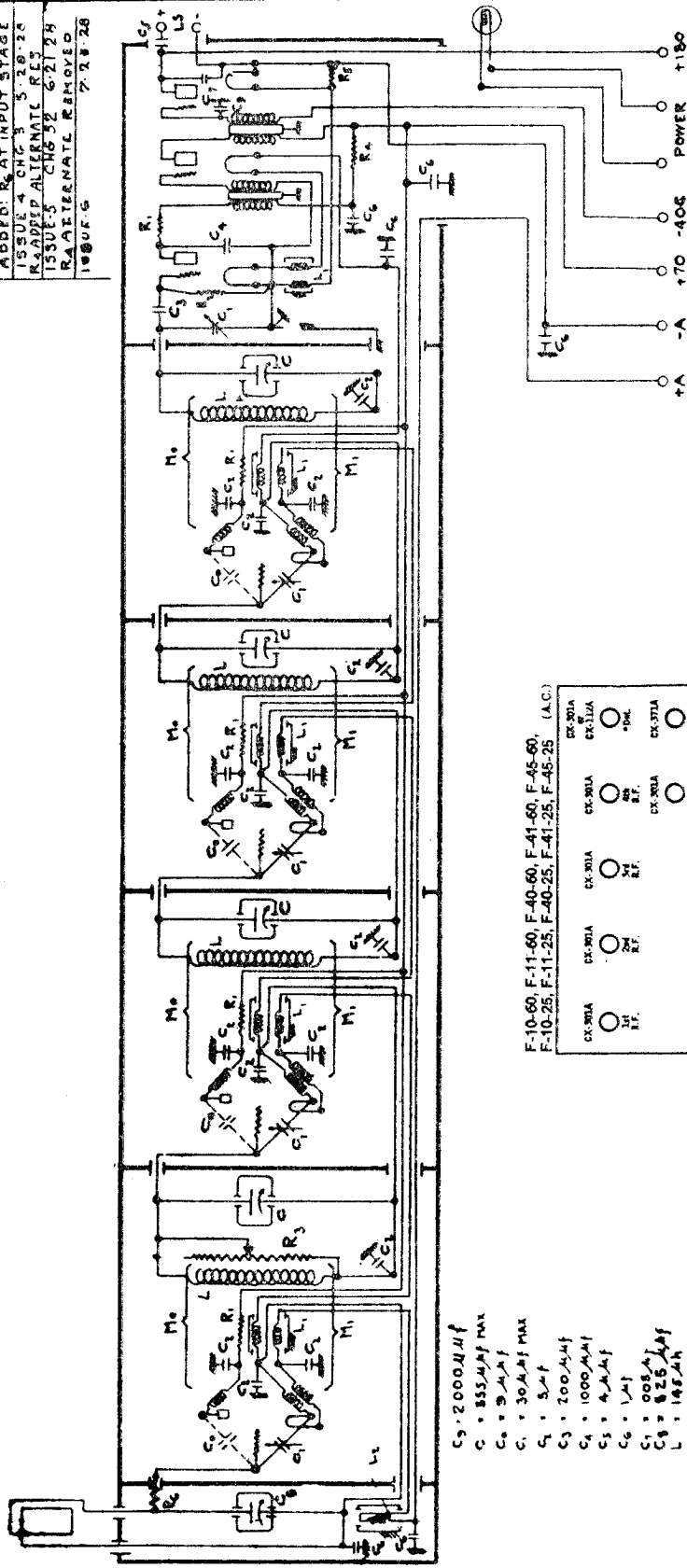
3964

FEDERAL RADIO CORP.

MODEL F (25 Cycle)

CHANGE RECORD

ISSUE-1	10-28-37
C9 (2000 μ f) ADDED	
ISSUE-2	2-12-38
R4 WAS 160,000 Ω	
ISSUE-3	8-21-38
CHG. AT INPUT STAGE	
ADDED R2 AT INPUT STAGE	
ISSUE-4	5-28-38
R2 ADDED ALTERNATE KEY	
ISSUE-5	6-21-38
RA ALTERNATE REMOVED	
ISSUE-6	7-28-38



DESIGNED FOR

NAME: SCHEMATIC FOR 25 CYCLE TYPE F REC SUB ASSY

MAT: SCALE

DRAWN: *W.P.S.* 10/12/37 CHECKED: *W.P.S.* 11/18/37

TRACED: APPROVED

FEDERAL TEL. MFG. CO. BUFFALO, N.Y.

3982

F-10-60, F-11-60, F-40-60, F-41-60, F-45-60, F-10-25, F-11-25, F-40-25, F-41-25, F-45-25 (A.C.)

CK-301A	CK-301A	CK-301A	CK-301A	CK-301A	CK-301A
LT.	LT.	LT.	LT.	LT.	LT.
LT.	LT.	LT.	LT.	LT.	LT.
LT.	LT.	LT.	LT.	LT.	LT.

- C9 = 2000 μ f
- C1 = 855 μ f MAX
- C2 = 9 μ f
- C3 = 30 μ f MAX
- C4 = 3 μ f
- C5 = 200 μ f
- C6 = 1000 μ f
- C7 = 4 μ f
- C8 = 1 μ f
- C9 = 825 μ f
- L1 = 90 μ h AT 1000 \sim
- L2 = 260 μ h AT 1000 \sim
- M5 + M4 = 132 μ h AT R.F.
- R1 = 200 Ω
- R2 = 1,000,000 Ω
- R3 = 500,000 Ω
- R4 = 20,000 Ω
- R5 = 100 Ω
- R6 = 900 Ω

Model F

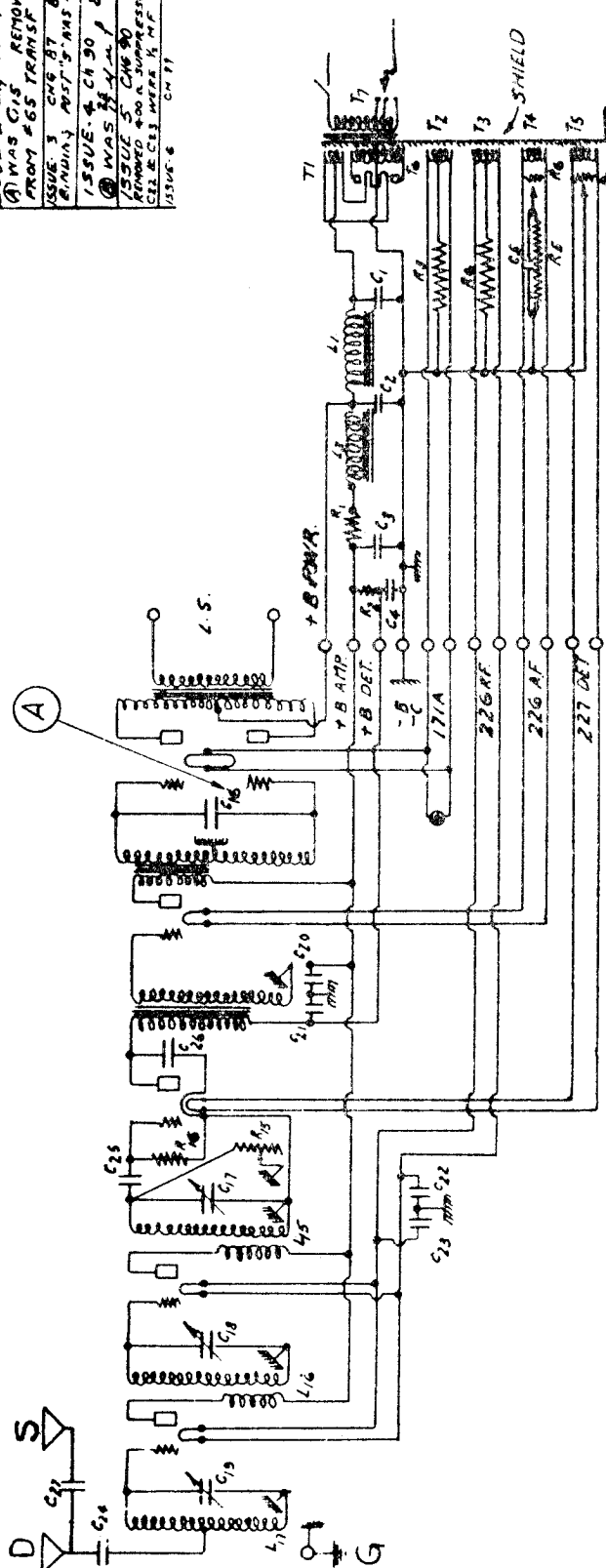
FEDERAL RADIO CORP.

MODEL G (25 Cycle)

CHANGE RECORD

ISSUE 1 - 6-29-28
 9000 SUPPLEMENTAL CIRCUIT
 ISSUE 2 - 7-27-28
 FROM C15 REMOVED C16
 FROM #65 TRANS
 ISSUE 3 - 8-13-28
 BINDING POST'S AND WIRING L
 ISSUE 4 - 8-15-28
 WAS 14-1-1
 ISSUE 5 - 8-17-28
 REMOVED #60 & SUBSTITUTIONS
 SEE C13 PARTS LIST
 ISSUE 6 - 8-27-28

MAKE NO CHANGES. REPORT ALL ERRORS
 FRACTIONAL DIMENSIONS MAY ARI
 UNLESS OTHERWISE NOTED



PARTS LIST FOR POWER UNIT
 C1 = 2 MFD
 C2 = 4
 C3 = 4
 C4 = 1
 C5 = 1.5
 C6 = 40
 C7 = 509,000
 C8 = 2
 C9 = 10
 C10 = 10
 C11 = 10
 C12 = 10
 C13 = 10
 C14 = 10
 C15 = 10
 C16 = 10
 C17 = 10
 C18 = 10
 C19 = 10
 C20 = 10
 C21 = 10
 C22 = 10
 C23 = 10
 C24 = 10
 C25 = 10
 C26 = 10
 C27 = 10

PARTS LIST FOR RECEIVER
 C1 = 2 MFD
 C2 = 4
 C3 = 4
 C4 = 1
 C5 = 1.5
 C6 = 40
 C7 = 509,000
 C8 = 2
 C9 = 10
 C10 = 10
 C11 = 10
 C12 = 10
 C13 = 10
 C14 = 10
 C15 = 10
 C16 = 10
 C17 = 10
 C18 = 10
 C19 = 10
 C20 = 10
 C21 = 10
 C22 = 10
 C23 = 10
 C24 = 10
 C25 = 10
 C26 = 10
 C27 = 10

Model G

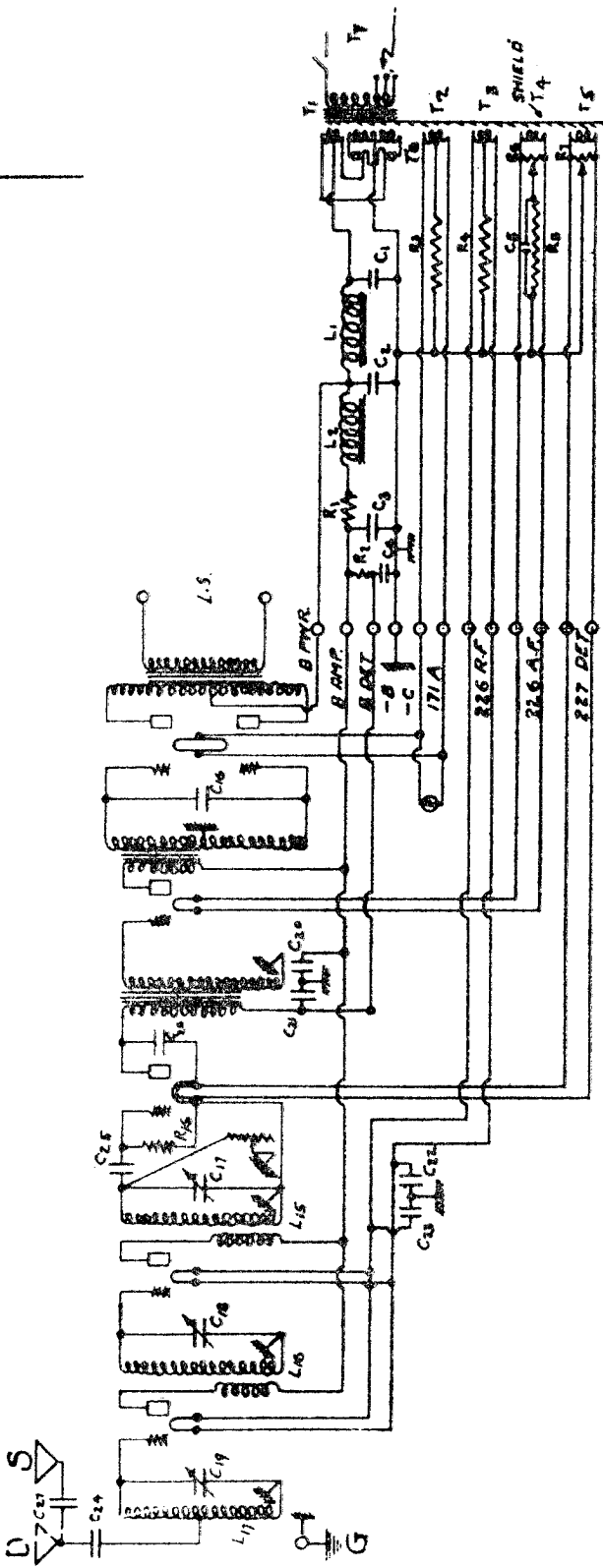
NAME	DESIGNED FOR	REC. & PWR. UNIT
MAT	SUB. ASSY	SCALE
DRAWN	CHECKED	APPROVED
TRACED	DATE	NO.
FEDERAL TEL. MFG. CO. BUFFALO, N. Y.		

3985

MODEL H CODE 71-030

FEDERAL RADIO CORP.

CHANGE RECORD
ISSUE 1 8/7/22



PARTS LIST FOR REC.

- C16 = .0022 µf
- C17 = .0003 µf
- C18 = .0003 µf
- C19 = .0003 µf
- C20 = 1/2 µf
- C21 = 1/2 µf
- C22 = 1/2 µf
- C23 = 1/2 µf
- C24 = .0001 µf
- C25 = .0002 µf
- C26 = .001 µf
- C27 = 25 µf
- L16 = 262 µh
- L17 = 262 µh
- L18 = 262 µh
- R14 = 500,000 Ω
- R15 = 2 meg

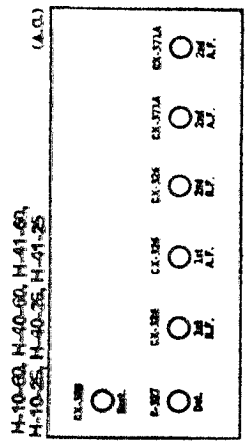
PARTS LIST FOR POWER UNIT

- C1 = 1 µf
- C2 = 1 µf
- C3 = 2 µf
- C4 = 1 µf
- C5 = 1/2 µf
- R1 = 3500 Ω
- R2 = 13,000 Ω
- R3 = 1300 Ω
- R4 = 1400 Ω
- R5 = 2500 Ω
- R6 = 40 Ω
- R7 = 575 Ω
- L1 = 15 h - 285 µh
- L2 = 27 h - 1600 µh
- L3 = 8
- L4 = 8
- L5 = 12
- L6 = 2590
- L7 = 575

VOLTAGES

Plate voltages are measured between the chassis and the respective tube plates.

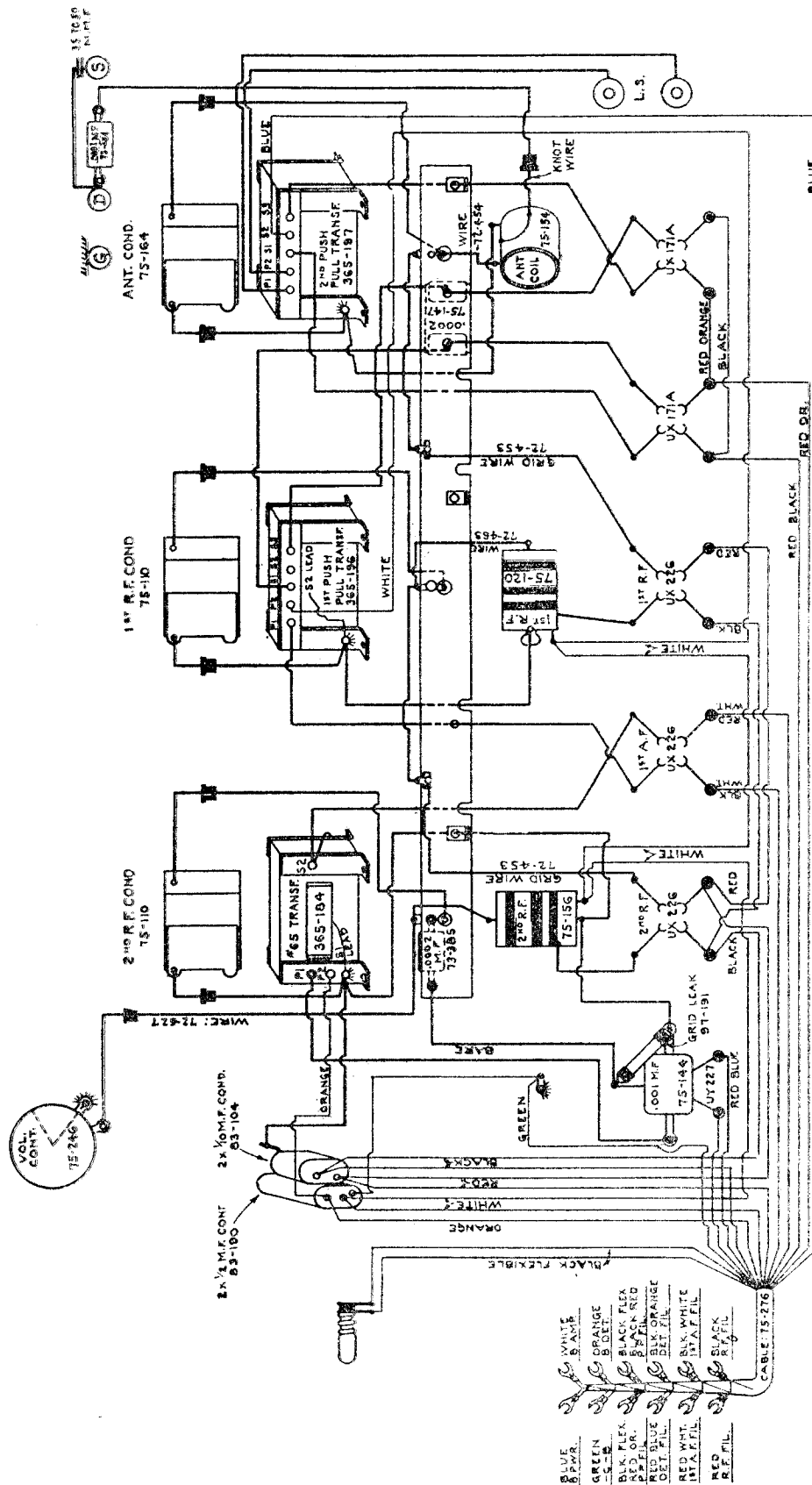
- 1st RF Plate 125 volts
- 2nd RF Plate 125 volts
- Detector Plate 62 volts
- 1st AF Plate 125 volts
- Output Plates 190 volts
- Grids and Cathodes 0 volts
- 1st RF Fil. 1.45 volts
- 2nd RF Fil. 1.45 volts
- Detector Fil 2.25 volts
- 1st AF Fil. 1.45 volts
- Output Fil. 5.1 volts



(A.C.)
H-10-60, H-40-60, H-41-60,
H-10-25, H-40-25, H-41-25

FEDERAL RADIO CORP.

MODEL H Receiver Chassis Wiring

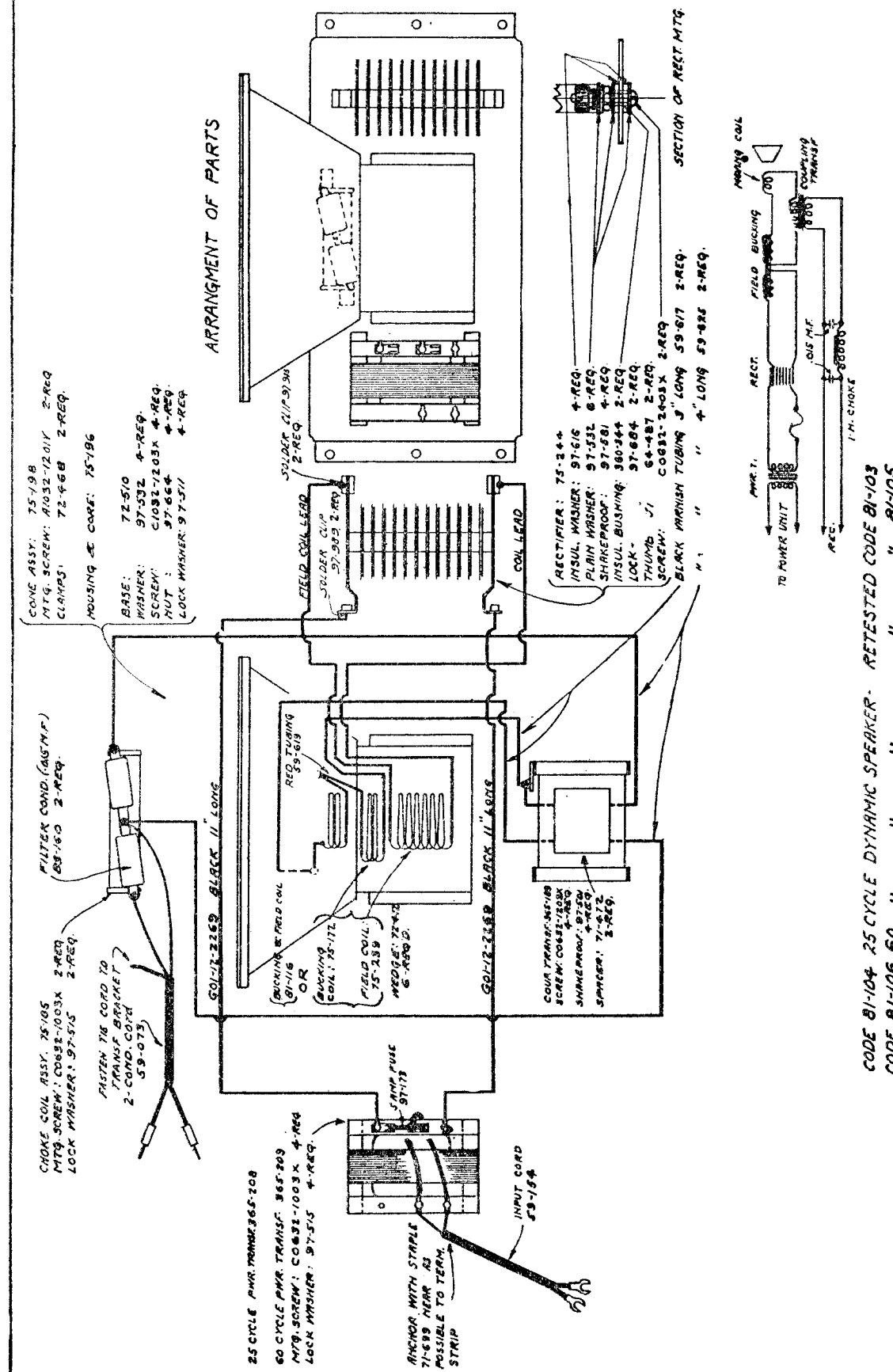


BOTTOM VIEW OF CHASSIS

MODEL H Power Unit
Chassis Wiring

FEDERAL RADIO CORP.

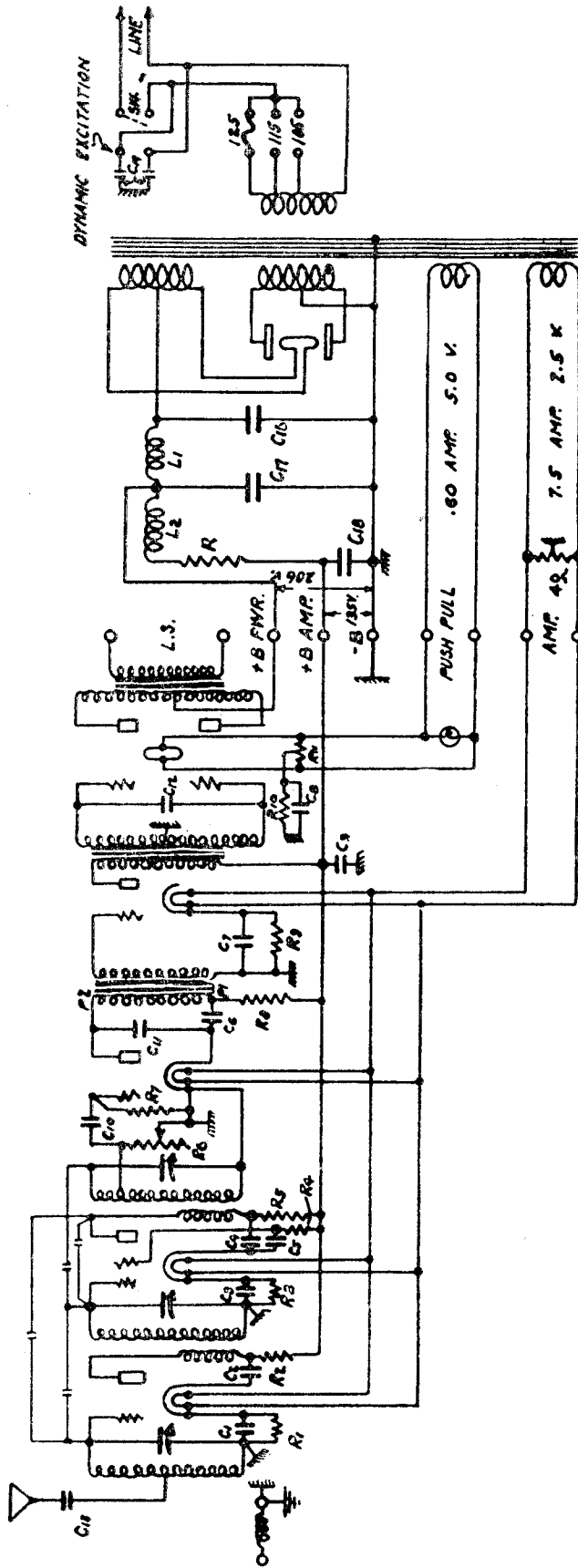
81-104



CODE 81-104 25-CYCLE DYNAMIC SPEAKER - RETESTED CODE 81-103
 CODE 81-106 60 "

FEDERAL RADIO CORP.

MODEL K



K-10-60, K-40-60, K-41-60,
K-10-25, K-40-25, K-41-25

Model K

(A.C.)

CX-380	Ret.
C-327	1st A.F.
CX-371A	2nd A.F.
C-324	2nd R.F.
C-327	1st A.F.
CX-371A	2nd A.F.
C-324	2nd R.F.
C-327	1st R.F.

C1	1000 μ
C2	6000 μ
C3	200 μ
C4	45,000 μ
C5	5,000 μ
C6	200 μ
C7	2,000 μ
C8	10,000 μ
C9	100 μ
C10	100 μ
C11	100 μ
C12	100 μ
C13	100 μ
C14	100 μ
C15	100 μ
C16	100 μ
C17	100 μ
C18	100 μ
C19	100 μ
C20	100 μ
R1	1000 Ω
R2	6000 Ω
R3	200 Ω
R4	45,000 Ω
R5	5,000 Ω
R6	200 Ω
R7	2,000 Ω
R8	10,000 Ω
R9	100 Ω
R10	100 Ω
R11	100 Ω
R12	100 Ω
R13	100 Ω
R14	100 Ω
R15	100 Ω
R16	100 Ω
R17	100 Ω
R18	100 Ω
R19	100 Ω
R20	100 Ω
L1	1500 μ
L2	15 H. 200 μ
L3	60 H. 1570 μ
L4	2 M.H.F.
L5	1 M.H.F.
L6	2 M.H.F.
L7	0.1 M.H.F.
L8	0.1 M.H.F.
L9	0.1 M.H.F.
L10	0.1 M.H.F.
L11	0.1 M.H.F.
L12	0.1 M.H.F.
L13	0.1 M.H.F.
L14	0.1 M.H.F.
L15	0.1 M.H.F.
L16	0.1 M.H.F.
L17	0.1 M.H.F.
L18	0.1 M.H.F.
L19	0.1 M.H.F.
L20	0.1 M.H.F.

MODEL 35, 40
 Data
 MODEL "Cathedral Tone"
 Schematic

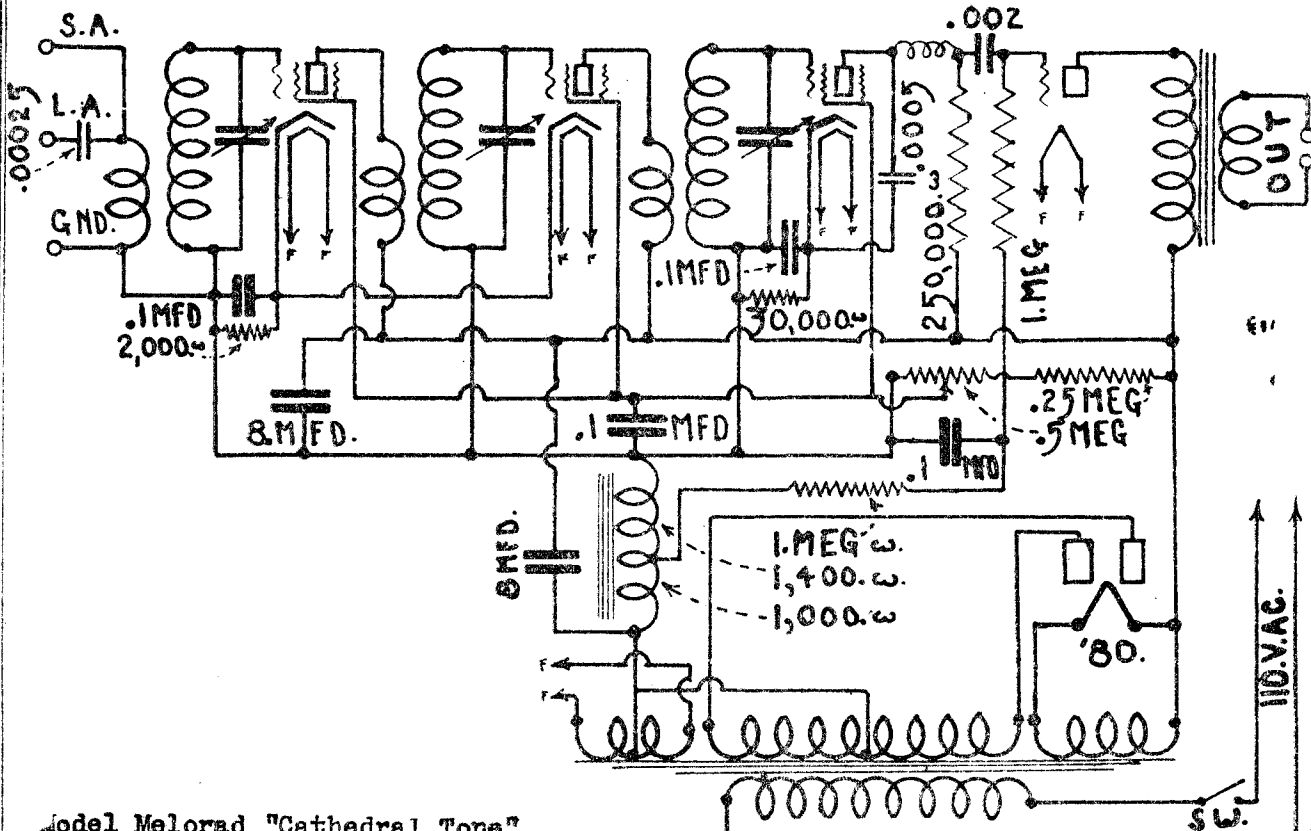
FEDERATED PURCHASER

Model 35, 40

ADJUSTMENTS The 175 kc. oscillator must be accurately tuned to 175 kc. and only 175 kc. If this precaution is not observed it will be impossible to align the oscillator to the rest of the set and the set will not operate correctly as the oscillator is designed for exact 175 kc. operation.

The second intermediate frequency amplifier transformer shield can is removed and one side of the small variator condenser is disconnected from the primary coil. This coil is connected so that it still is in the plate circuit of the tube but the tuning condenser is not connected in the circuit. Now remove the grid cap from the intermediate amplifier tube and connect a 3 megohm resistor from the control grid to ground. Now connect the output from the 175 kc. oscillator to the grid of the intermediate frequency amplifier tube and tune the secondary for maximum deflection of the output meter. (Low voltage alternating current meter, 0 to 3 volts, connected across the voice coil of speaker). Now remove the shield can and connect the small tuning condenser that was previously removed back across the primary coil. With the 175 kc. oscillator connected the same as before, tune the primary for a maximum deflection of the output meter. (Caution: Do not under any circumstances try to retune the secondary after having tuned the primary. **This is important.**) After having tuned this stage proceed to the next intermediate frequency:

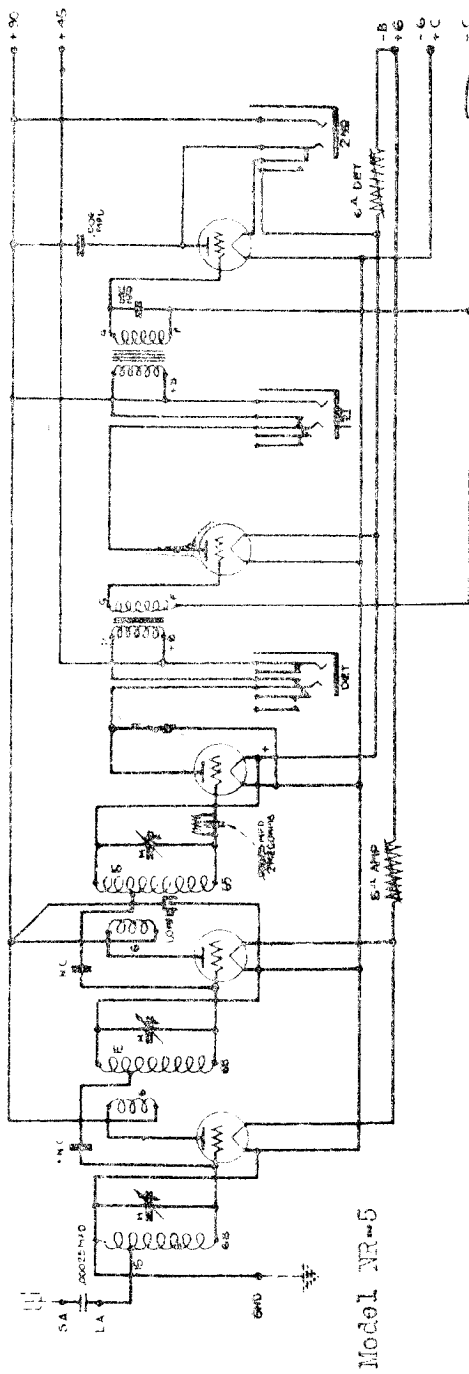
(b) Replace the grid cap on the intermediate frequency amplifier and proceed to the first detector tube. Remove this tube cap and connect the 175 kc. oscillator as before, being sure to connect the 3 megohm resistor from control grid to ground. Now proceed to tune the intermediate frequency transformer by tuning the secondary first for maximum deflection of the output meter and then tuning the primary for maximum deflection. Tuning this transformer must be done very carefully as the selectivity of the whole receiver depends entirely on the tuning of this transformer.



Model Melorad "Cathedral Tone"

FREED RADIO AND TELEVISION CORP.

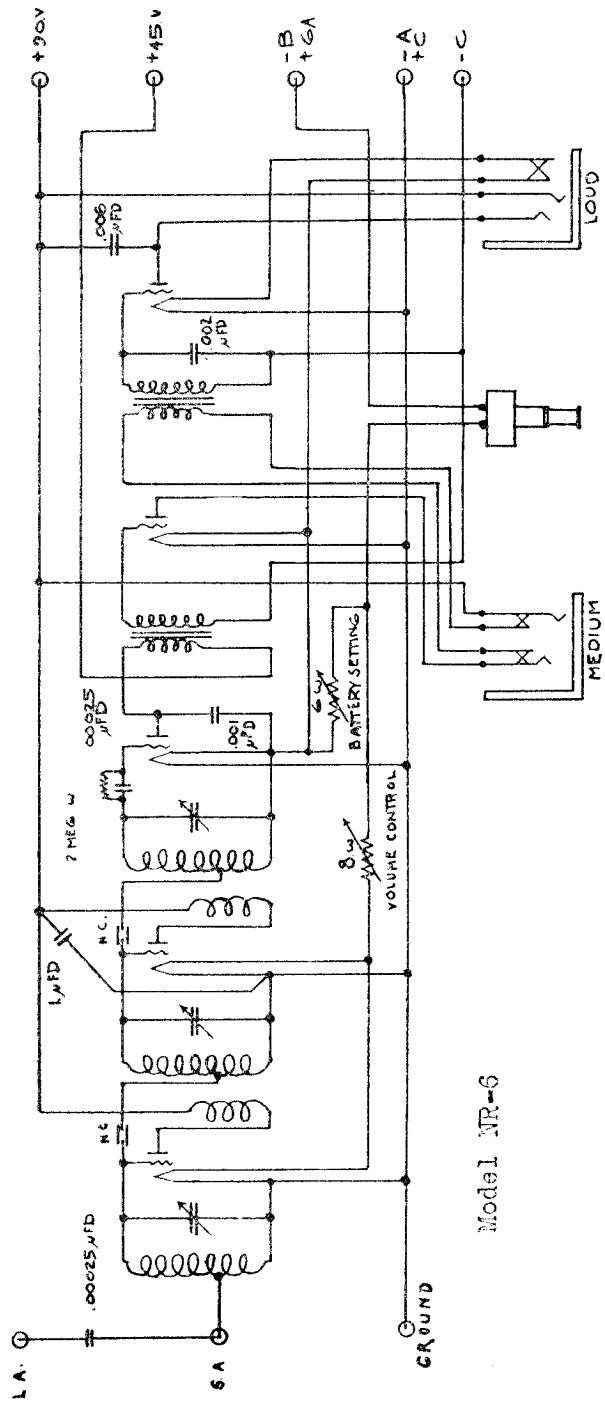
MODEL NR-5
MODEL NR-6



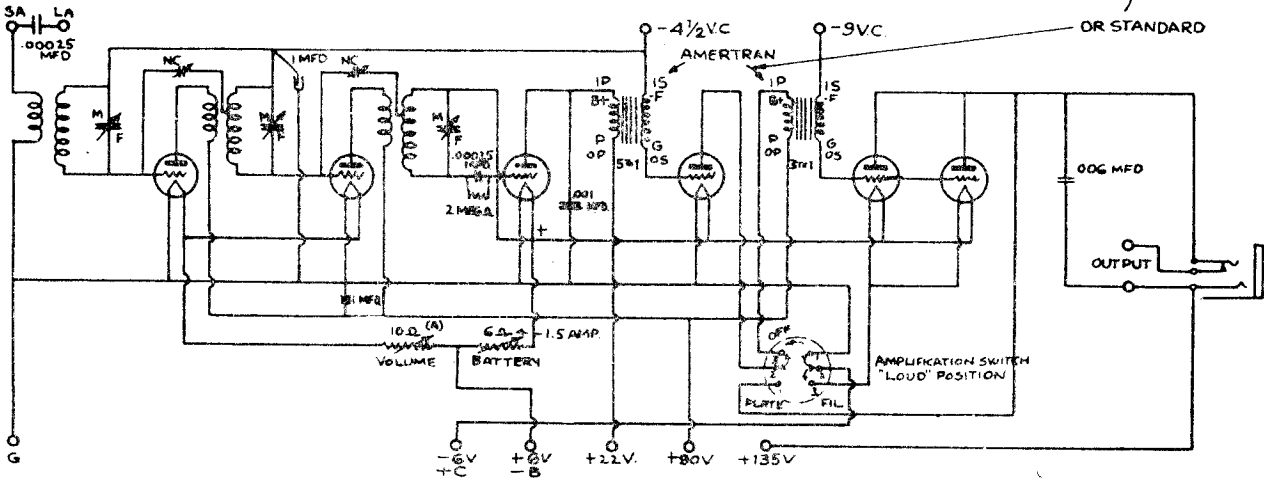
ALTERATION TABLE

REVISION	DESCRIPTION	DATE	BY	APPROVAL
1	DESIGN			
2	CONSTRUCTION			
3	TESTING			
4	PRODUCTION			

DATE: _____
CHECKED BY: _____
APPROVAL: _____

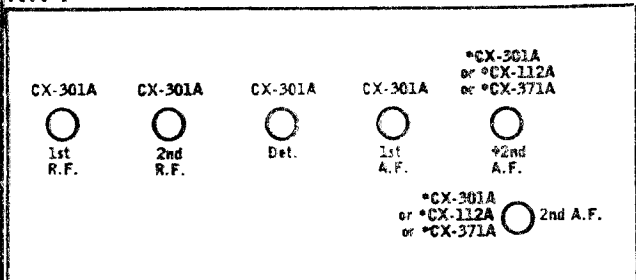


MODEL NR-7
 MODEL NR-8, NR-8A FREED RADIO AND TELEVISION CORP.



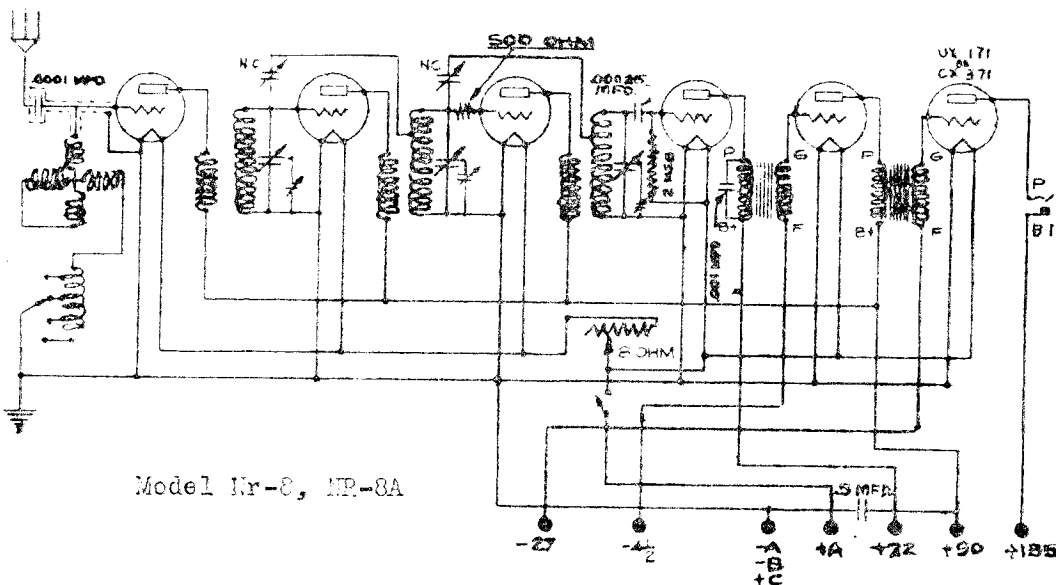
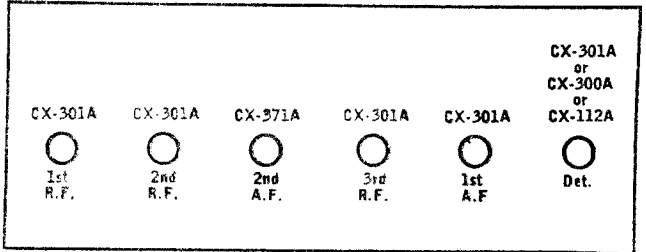
Model NR-7

NR-7 (Batt.)



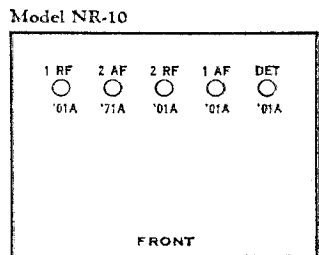
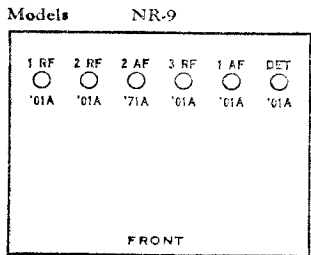
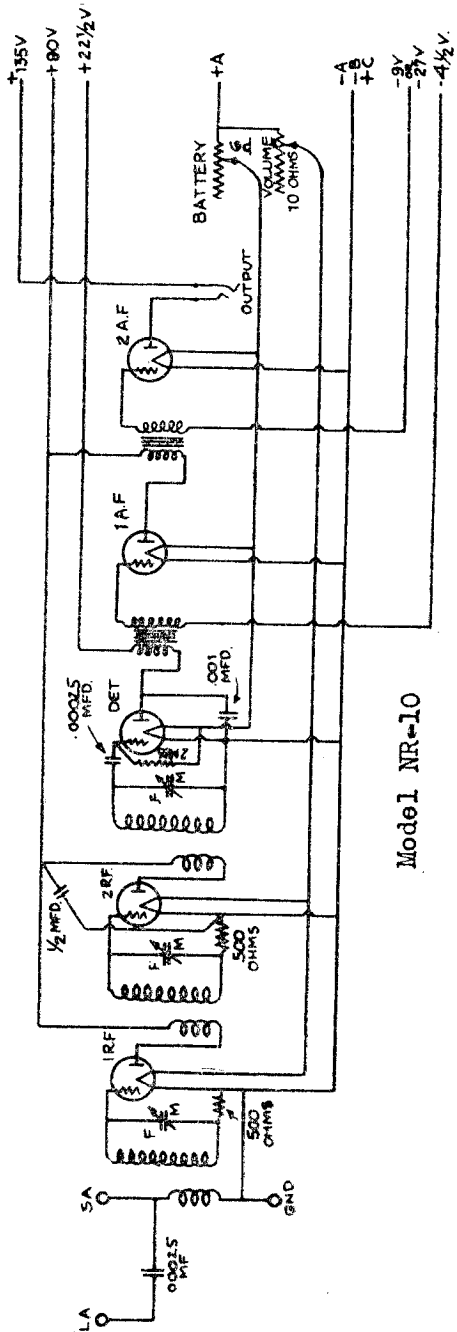
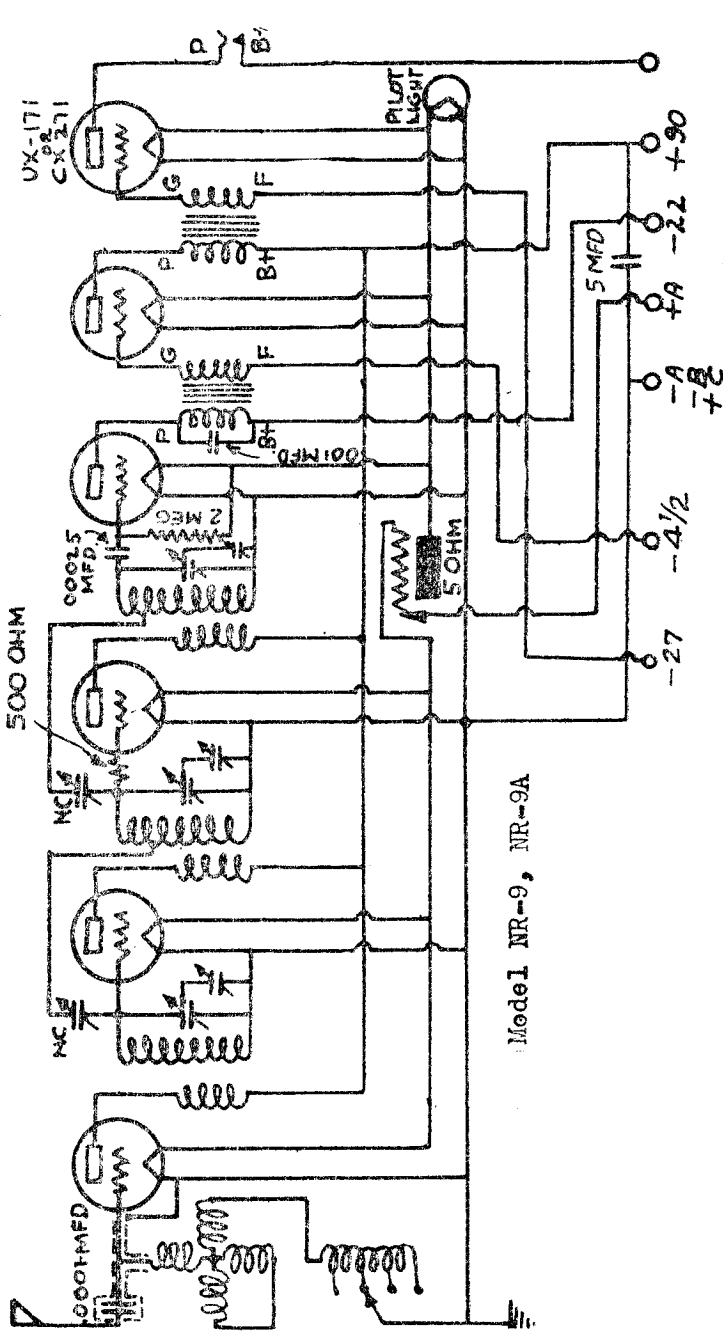
† If CX-301A's are used, use both stages in parallel. If power tubes are used, one tube in either 2nd A. F. socket is sufficient.

NR-8, (Batt.)



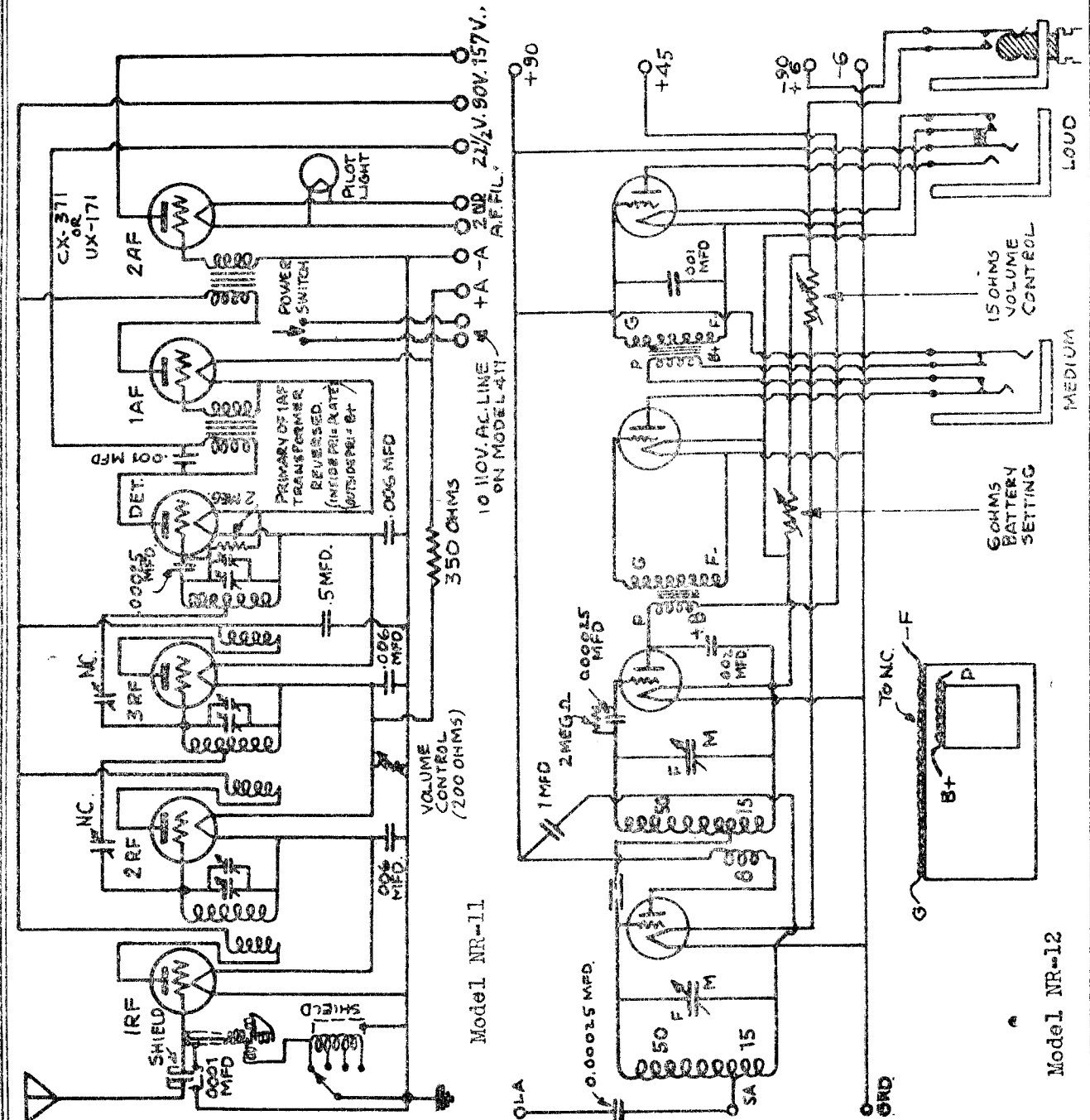
Model Nr-8, NR-8A

FREED RADIO AND TELEVISION CORP. MODEL NR-9, NR-9A MODEL NR-10



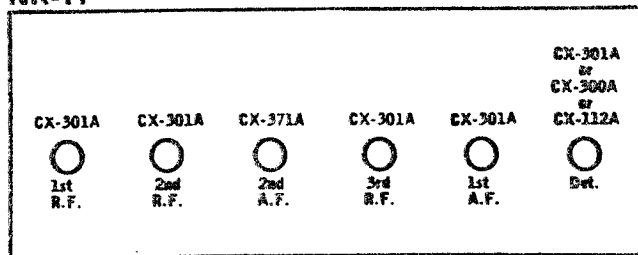
MODEL NR-11
MODEL NR-12

FREED RADIO AND TELEVISION CORP.



Power Pack For NR-11 On Next Page

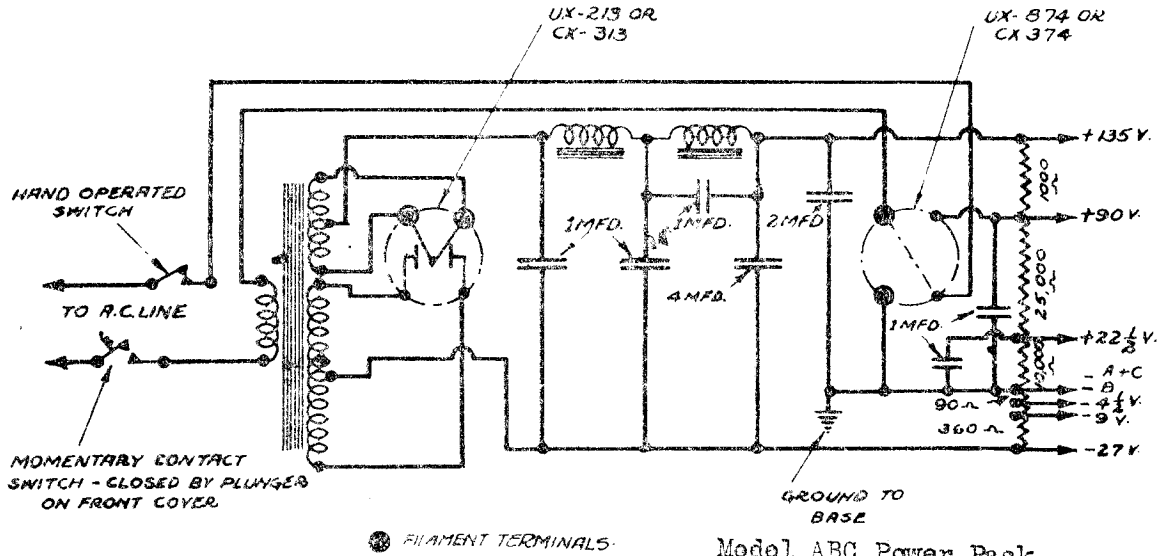
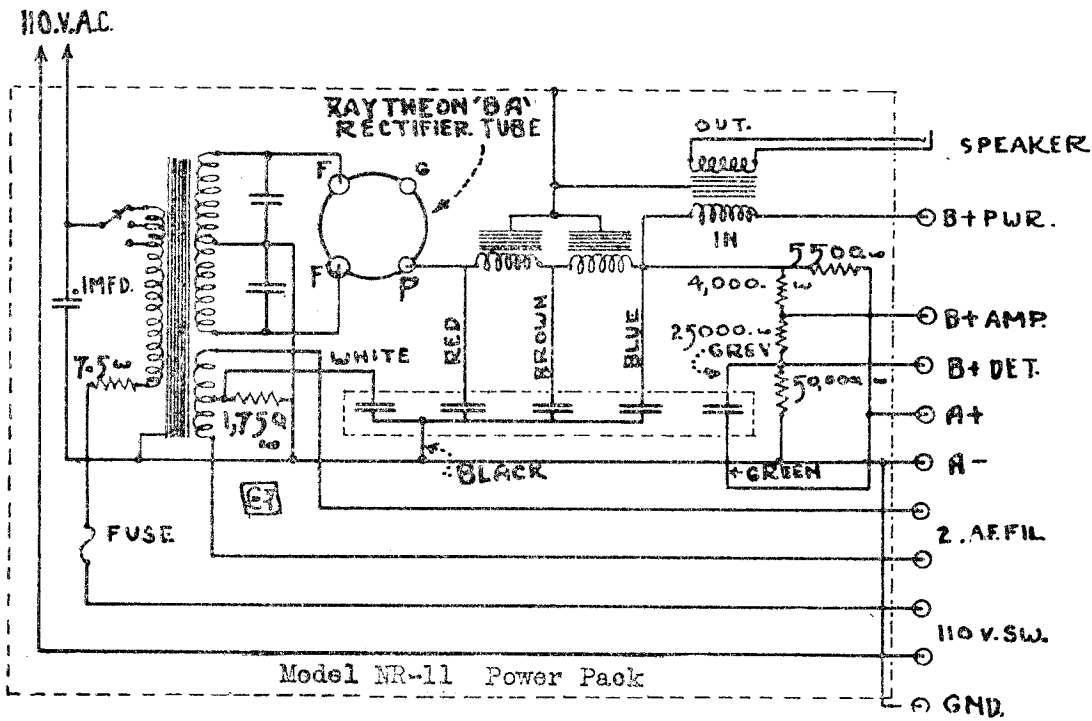
NR-11



This is an A.C. series filament receiver. All tubes except the 2nd A.F. stage tube must be 1/4 ampere tubes.

FREED RADIO AND TELEVISION CORP.

MODEL NR-11
Power Pack
MODEL ABC
Power Pack



ALTERATION TABLE					DILINEATOR	
ALT. LET.	REMARKS	DATE	BY	APP'D.	TRACER	DATE
C	REWORK	10-6	JL	JPM	CHECKER	
					APPROVAL	
					DATE	
					CHIEF ENGINEER	

Freed-Oisemann
SPERRY BUILDING BROOKLYN NEW YORK

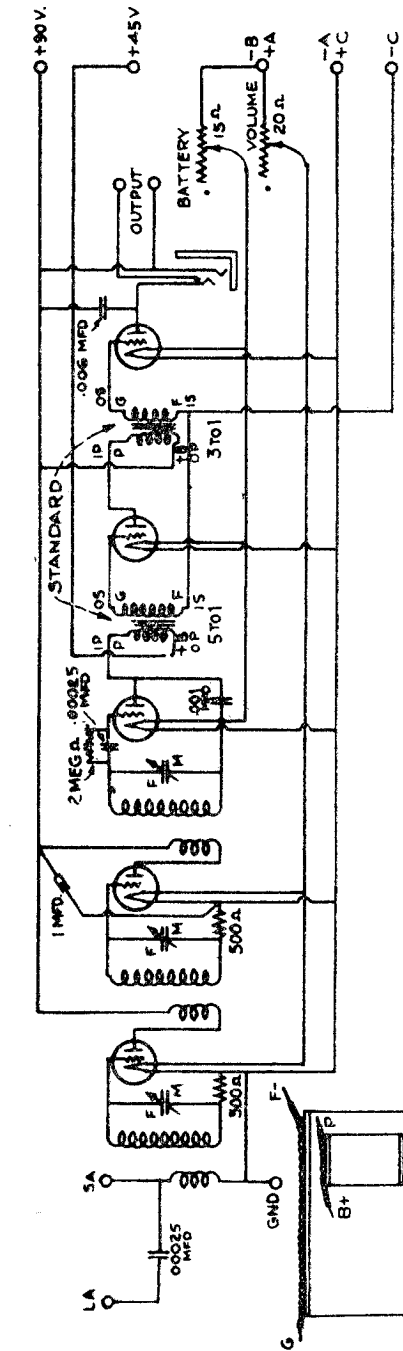
SCHEMATIC CIRCUIT DIAGRAM
OF
B AND C ELIMINATOR
SCALE DATE 7-12-27

949

DRAWING NUMBER W.D.-16

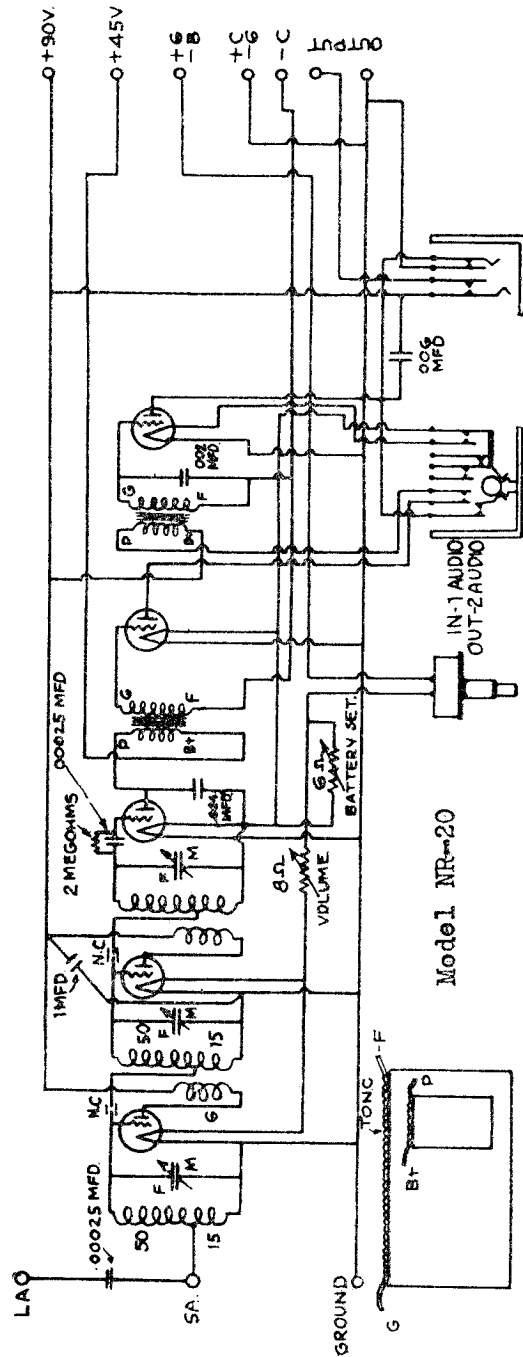
MODEL FE-15
 MODEL FE-18
 MODEL NR-20

FREED RADIO AND TELEVISION CORP.

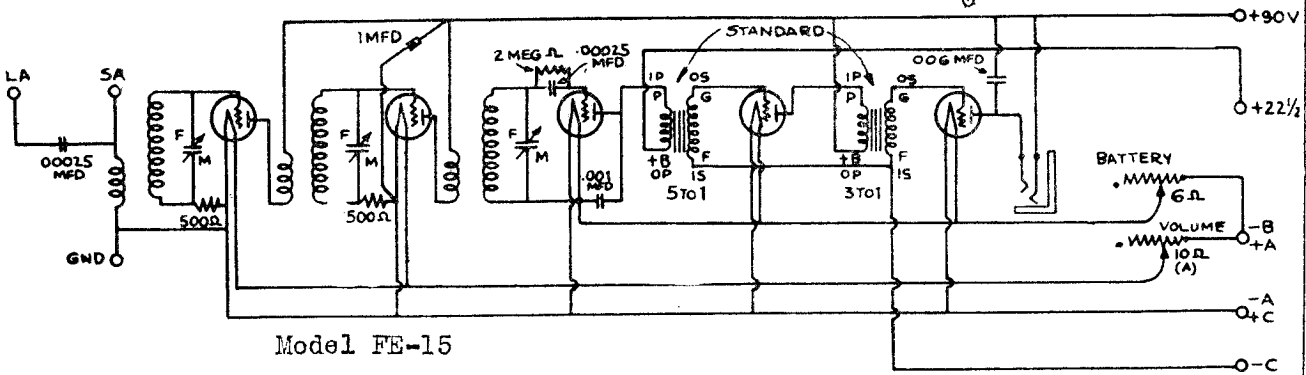


Model FE-18

BOTH WINDINGS IN SAME DIRECTION



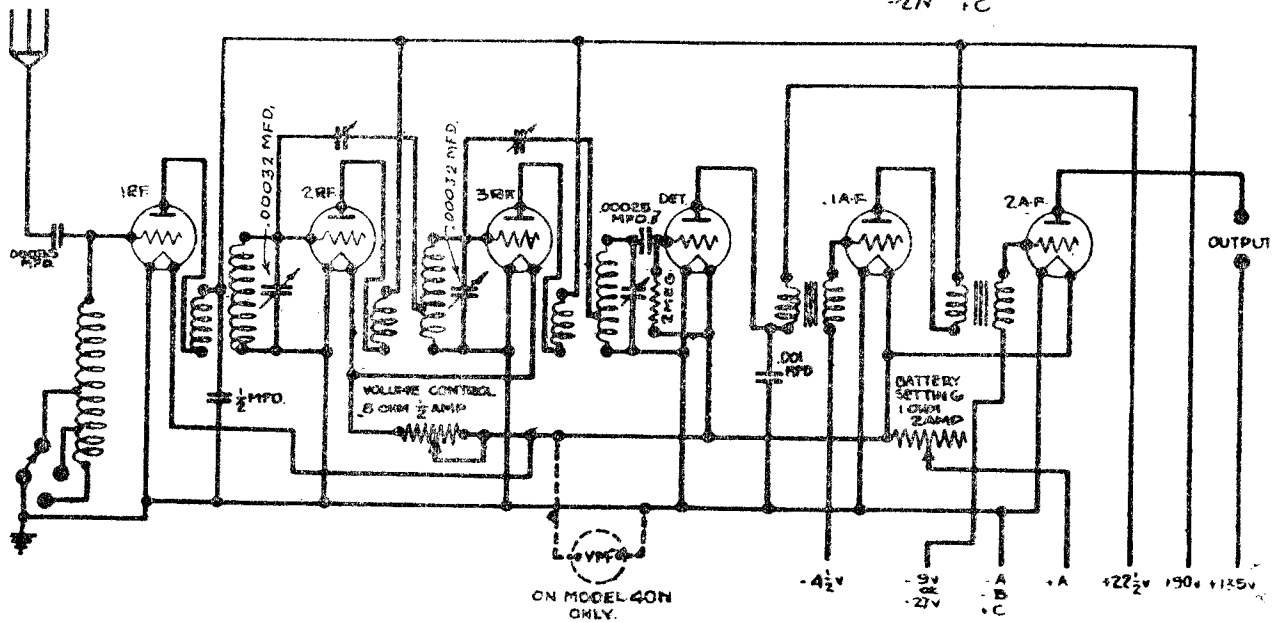
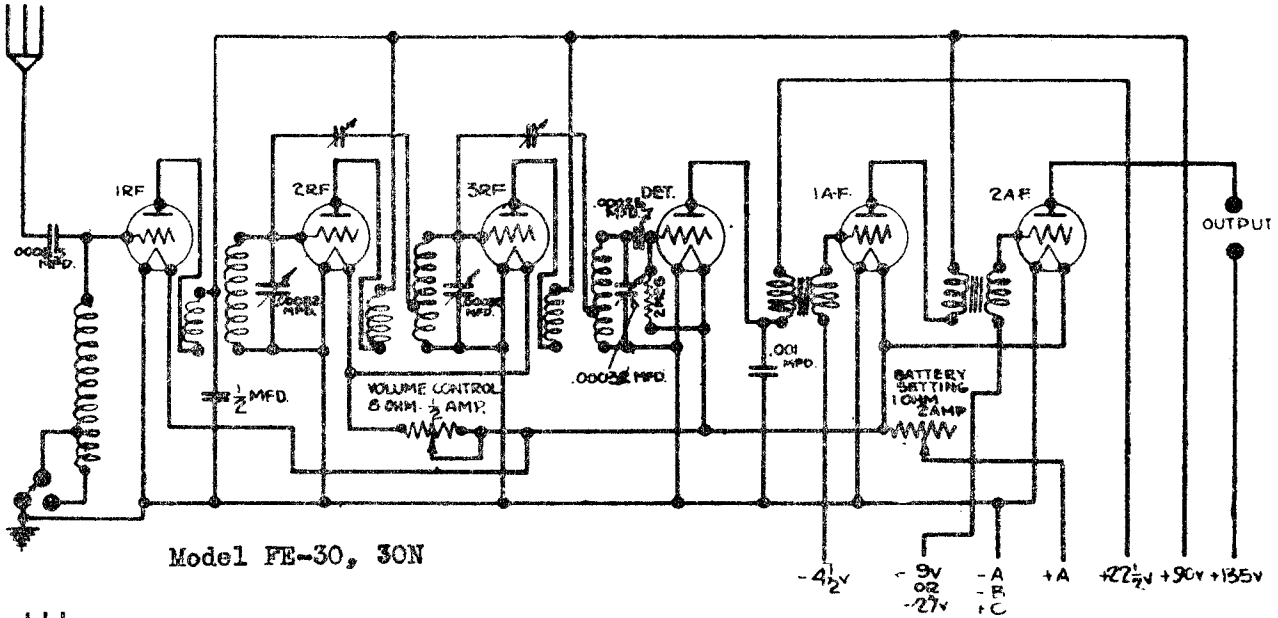
Model NR-20



Model FE-15

FREED - EISEMANN RADIO CORP.

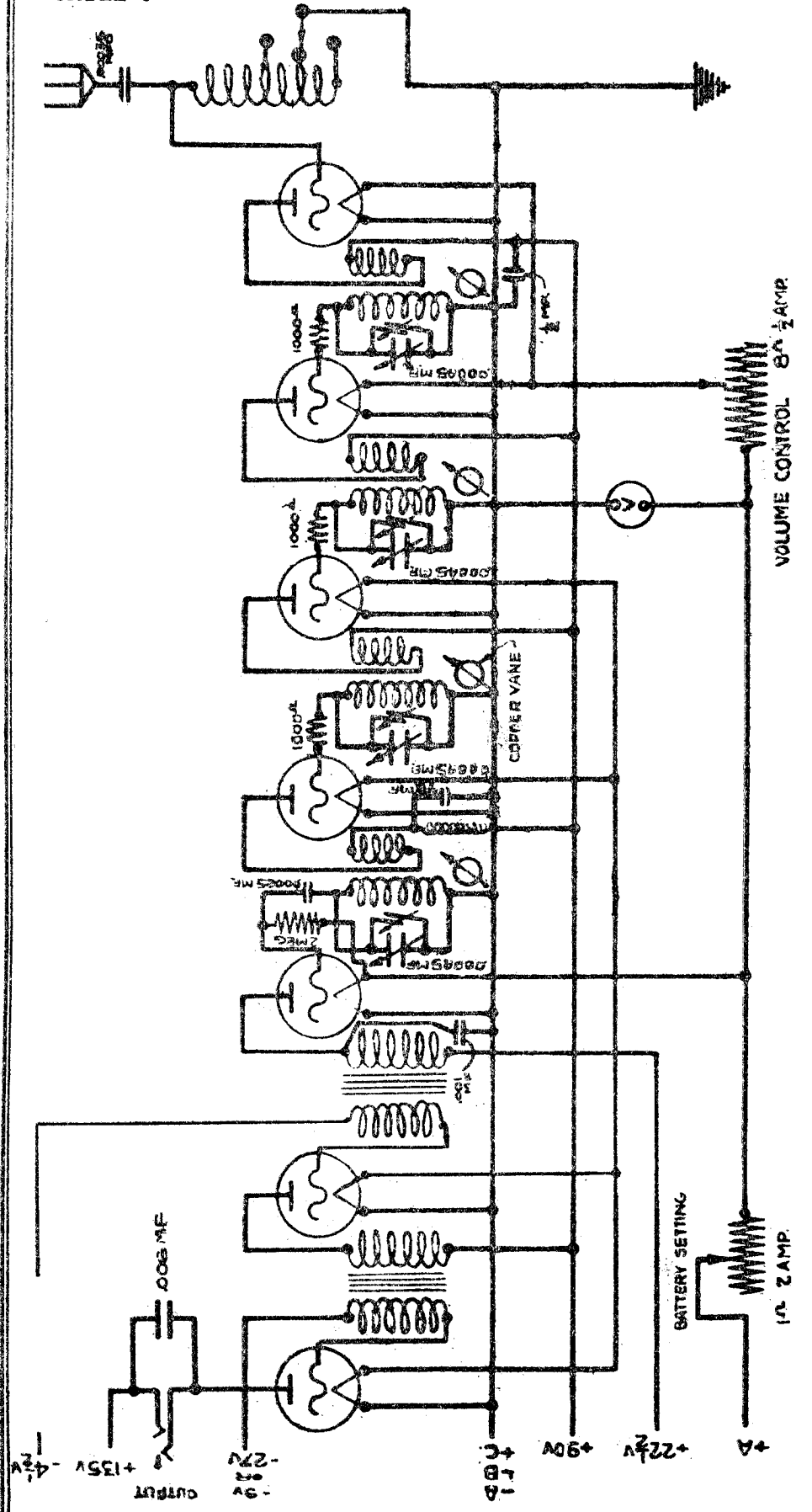
MODEL FE-30, 30N
MODEL 40N, 48N



Model 40N, 48N

FREED RADIO AND TELEVISION CORP

MODEL 50



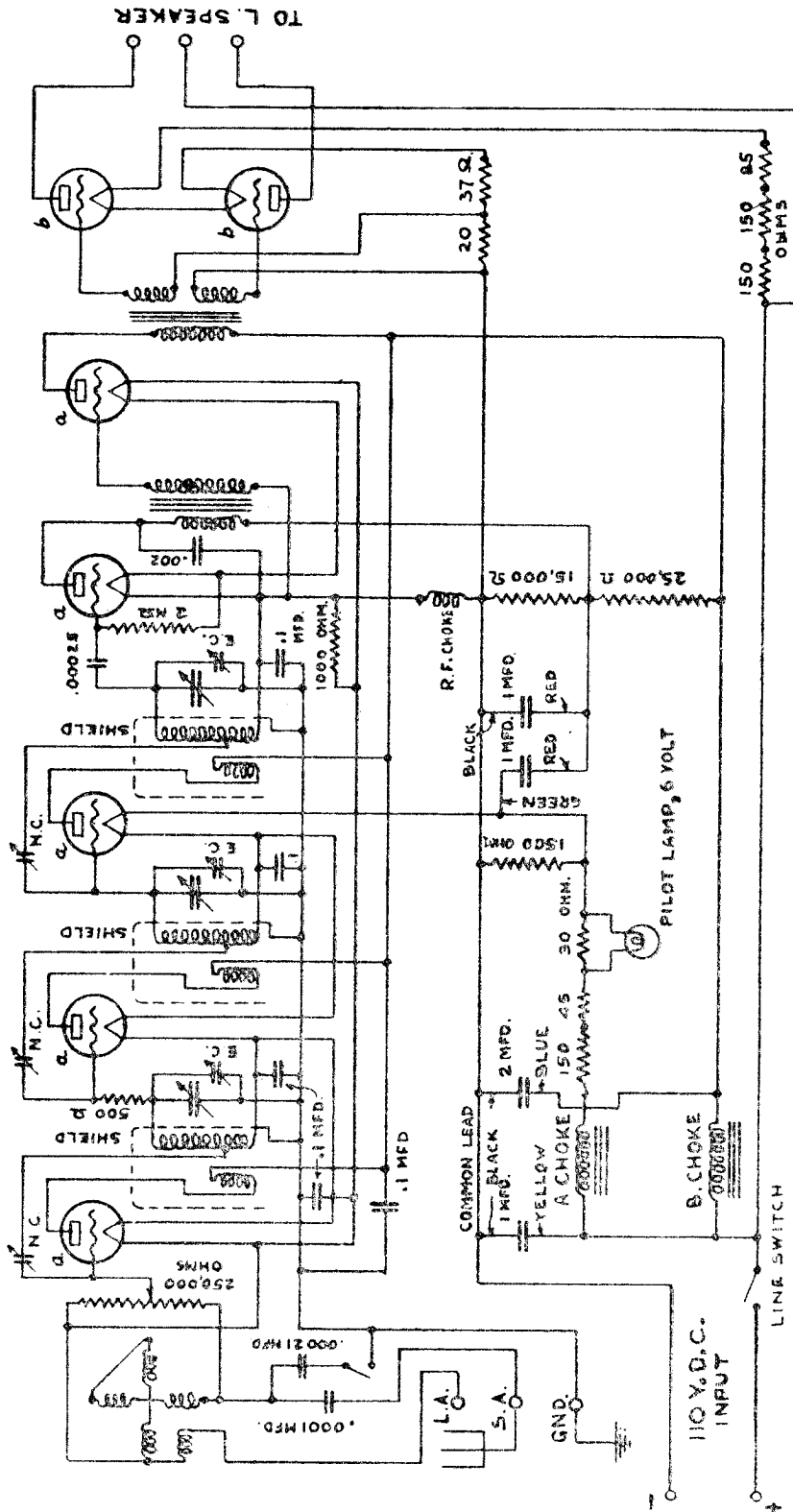
Freed-Cushman
 SPERRY BUILDING BROOKLYN NEW YORK
MODEL 50 RECEIVER
SCHEMATIC WIRING
 DATE: 4-13-27
 SCALE

ALTERATION TABLE			
ALY. LET.	REMARKS	BY	DATE

DEFINITION	W
TRACE	
CHECKER	
APPROVAL	
DATE	
CHIEF ENGINEER	

FREED RADIO AND TELEVISION CORP.

MODEL NR-55 DC



NOTE: RESISTANCES 65 AND 45 OHMS WOUND ON ONE TUBE
RESISTANCES 30, 20 AND 37 OHMS WOUND ON ONE TUBE

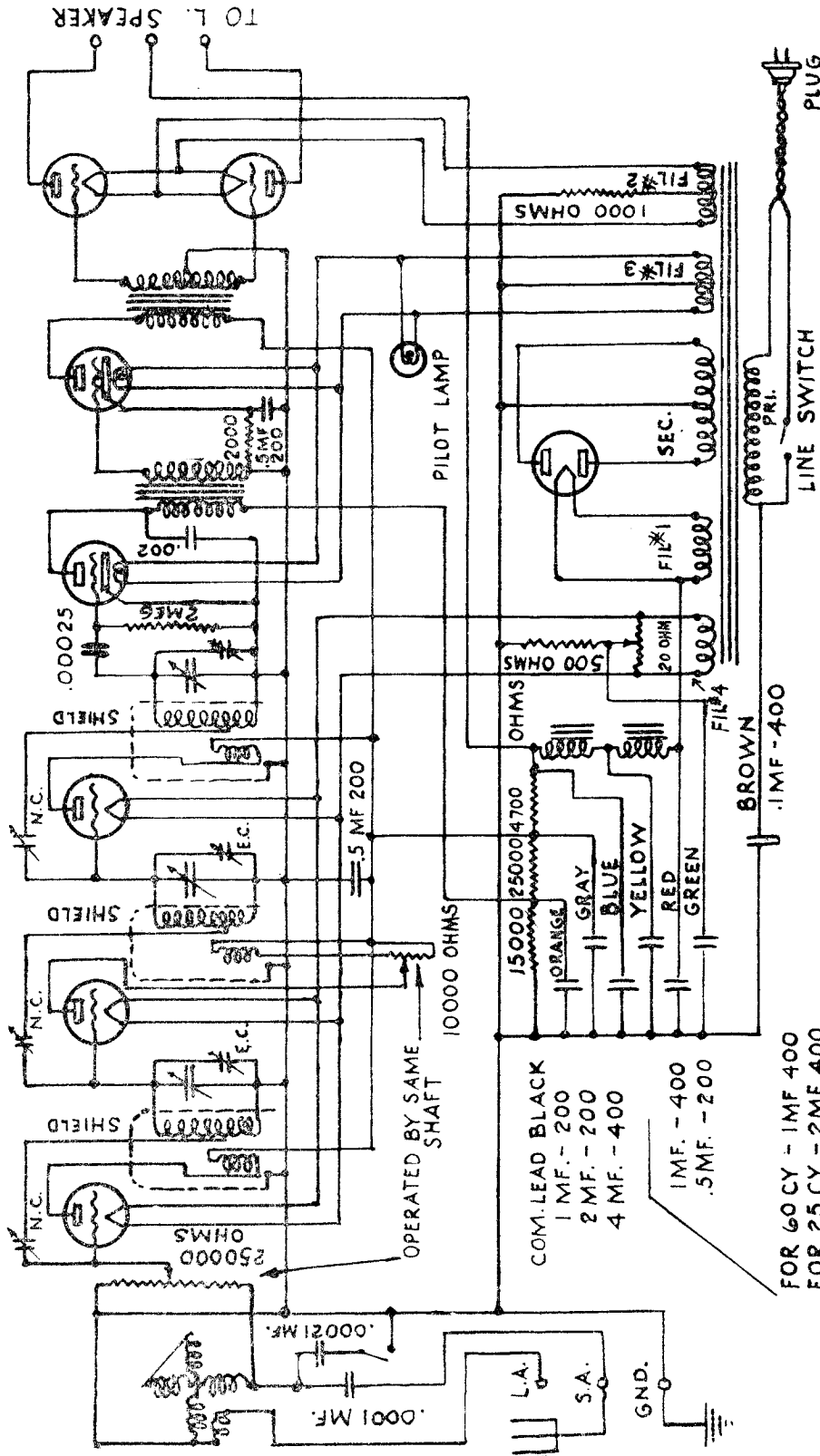
Freed-Ciemanann
PASSAIC N.J.
SCHEMATIC WIRING DIAGRAM
TYPE NR-55 D.C.
SCALE DATE 5-6-29

DISTRIBUTION TABLE		DELIMITATOR	
DRES	DATE	TRACER	CHECKER
	5/12/29		
	5/12/29		
APPROVAL		DATE	
[Signature]		[Signature]	
[Signature]		[Signature]	

NR-55DC, NR-56DC

CX-301A	0	DET.	CX-301A	0	1st A.F.
CX-301A	0	3rd R.F.	CX-371A	0	2nd A.F.
CX-301A	0	2nd R.F.	CX-371A	0	2nd A.F.
CX-301A	0	1st R.F.			

MODEL NR-55, NR-56 AC FREED RADIO AND TELEVISION CORP.



NR-55, NR-56 (A.U.)

<input type="radio"/>	CX-380	<input type="radio"/>	C-327	<input type="radio"/>	1st A.F.
<input type="radio"/>	Rect.	<input type="radio"/>	C-327	<input type="radio"/>	Det.
<input type="radio"/>	CX-326	<input type="radio"/>	CX-326	<input type="radio"/>	3rd R.F.
<input type="radio"/>	CX-326	<input type="radio"/>	CX-371A	<input type="radio"/>	2nd A.F.
<input type="radio"/>	1st R.F.	<input type="radio"/>	CX-326	<input type="radio"/>	2nd R.F.
		<input type="radio"/>	CX-371A	<input type="radio"/>	2nd A.F.

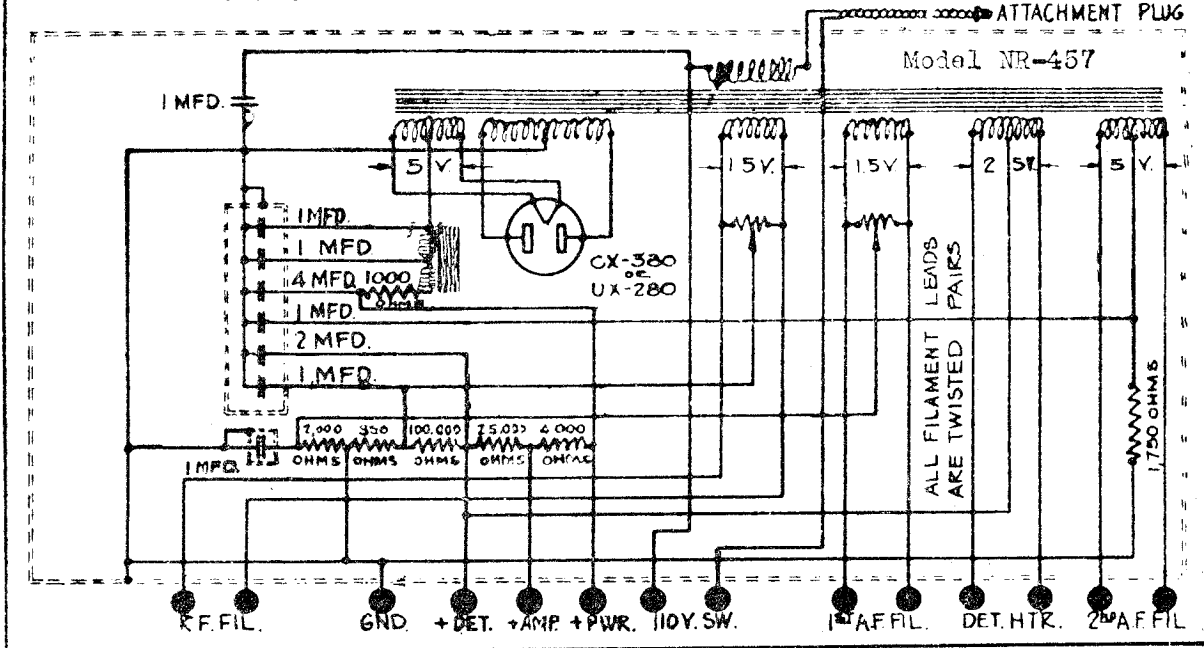
FREED-EISEMANN—Model 55
Line Voltage 116—Volume Control Position Full On

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION	TUNE DIAL		RECORDING PLUS IN SOCKET OF SET		TUNE IN TESTER		PLATE VOLTAGE	SCREEN GRID CHARGE	SHIELD GRID CHARGE
			A	B	VOLTS	WATTS	VOLTS	WATTS				PLATE	SCREEN
1	250	1st R.F.	1.5	80	1.45	76	5	2.4	4.5	2.2	
2	280	2nd R.F.	1.5	80	1.45	76	5	2.4	4.5	2.2	
3	280	3rd R.F.	1.5	80	1.47	76	5	2.4	4.5	2.2	
4	287	Det.	2.14	34	1.9	80	-	1.0	1.0	0.0	
5	287	1st A.	2.15	38	1.97	72	4.5	5	5.0	2.5	
6	171A	2nd A.	5.0	135	4.65	125	29	13.4	35	23	
7	171A	2nd A.	5.0	135	4.85	125	29	13	35	22	
8	280	Rect.	5.6	-	5.4	-	-	40	-	-	

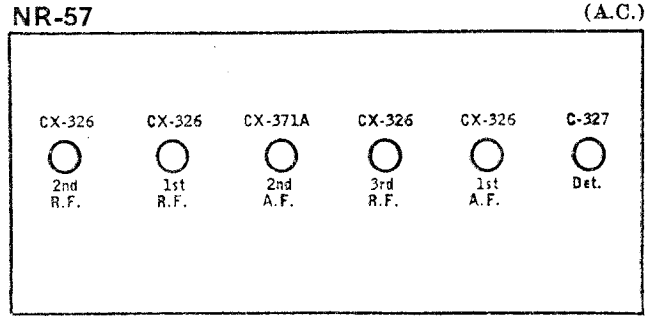
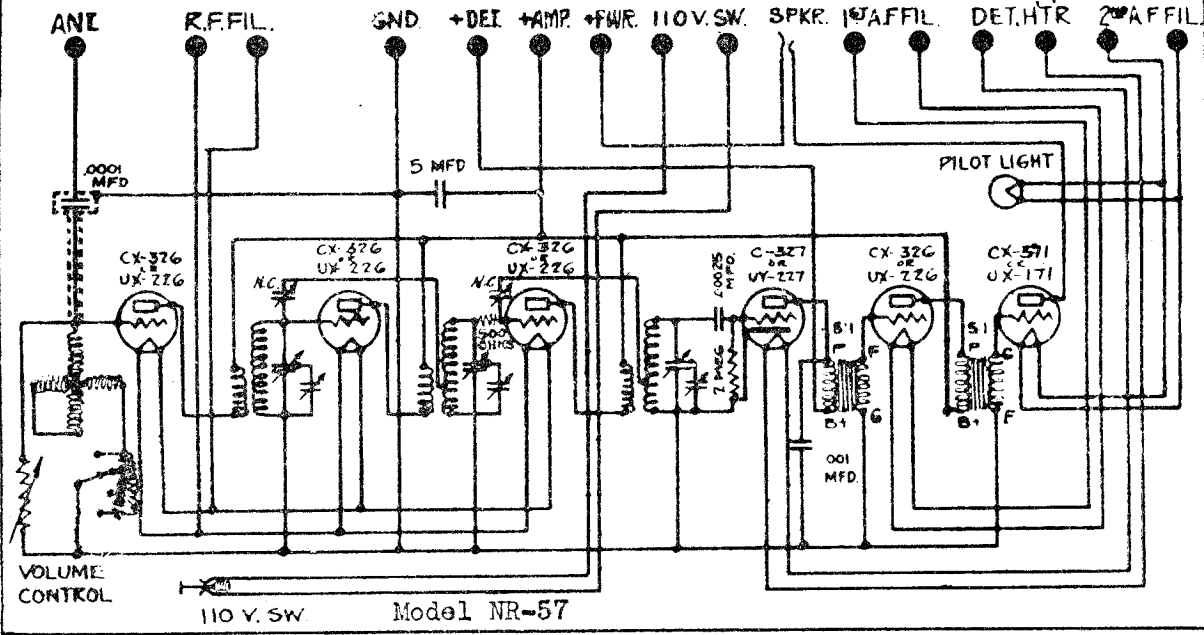
FREED RADIO AND TELEVISION CORP.

MODEL NR-57
Schematic
MODEL NR-457
Power Unit

A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED

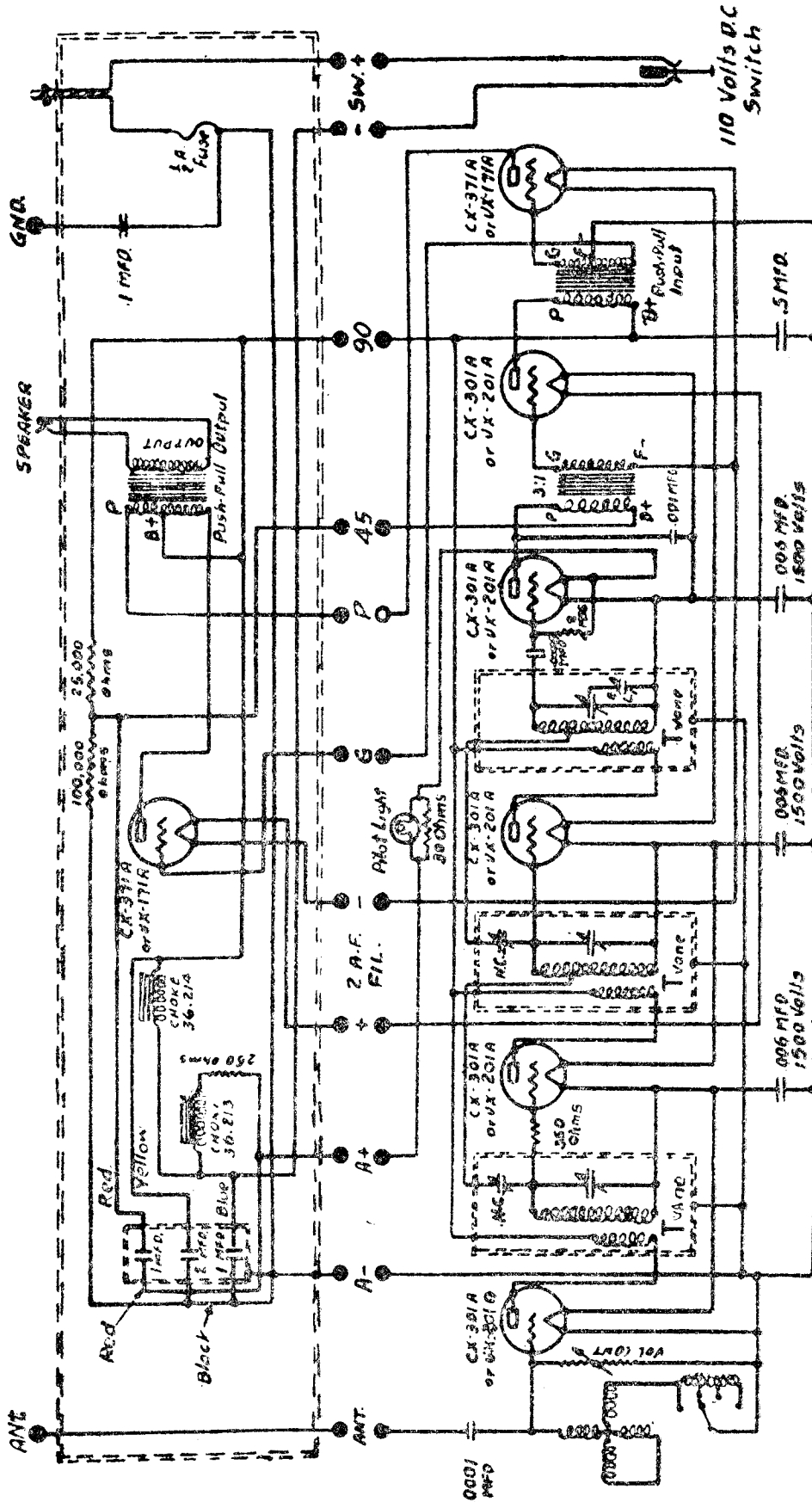


A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED



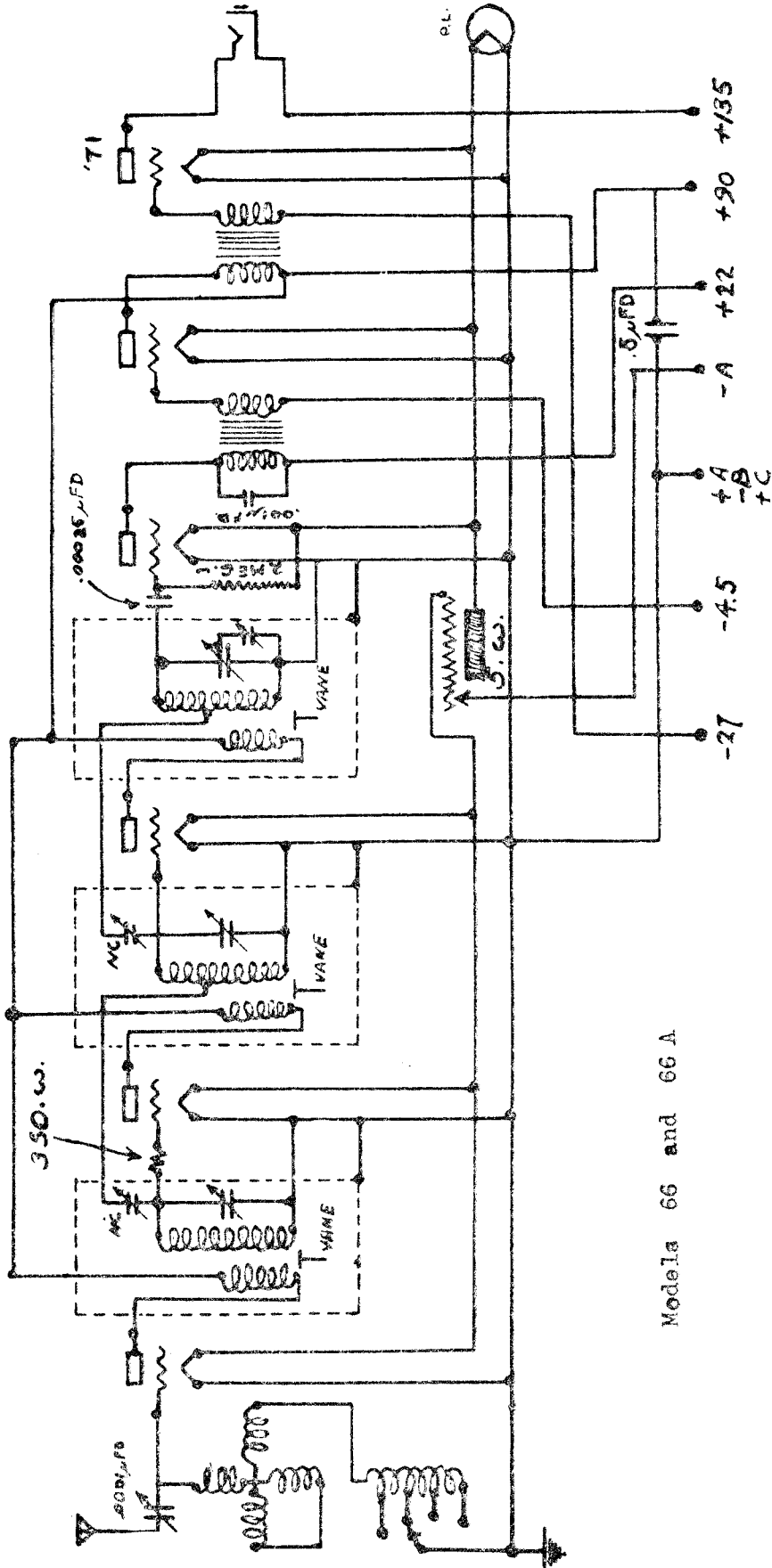
Power unit uses CX-380.

MODEL NR-60 DC FREED RADIO AND TELEVISION CORP.

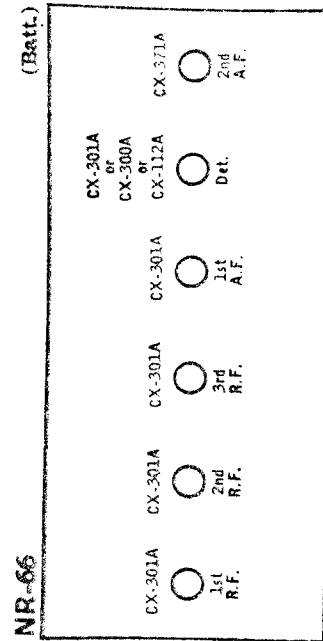


MODEL NR-66, 66A

FREED RADIO AND TELEVISION CORP.



Models 66 and 66 A

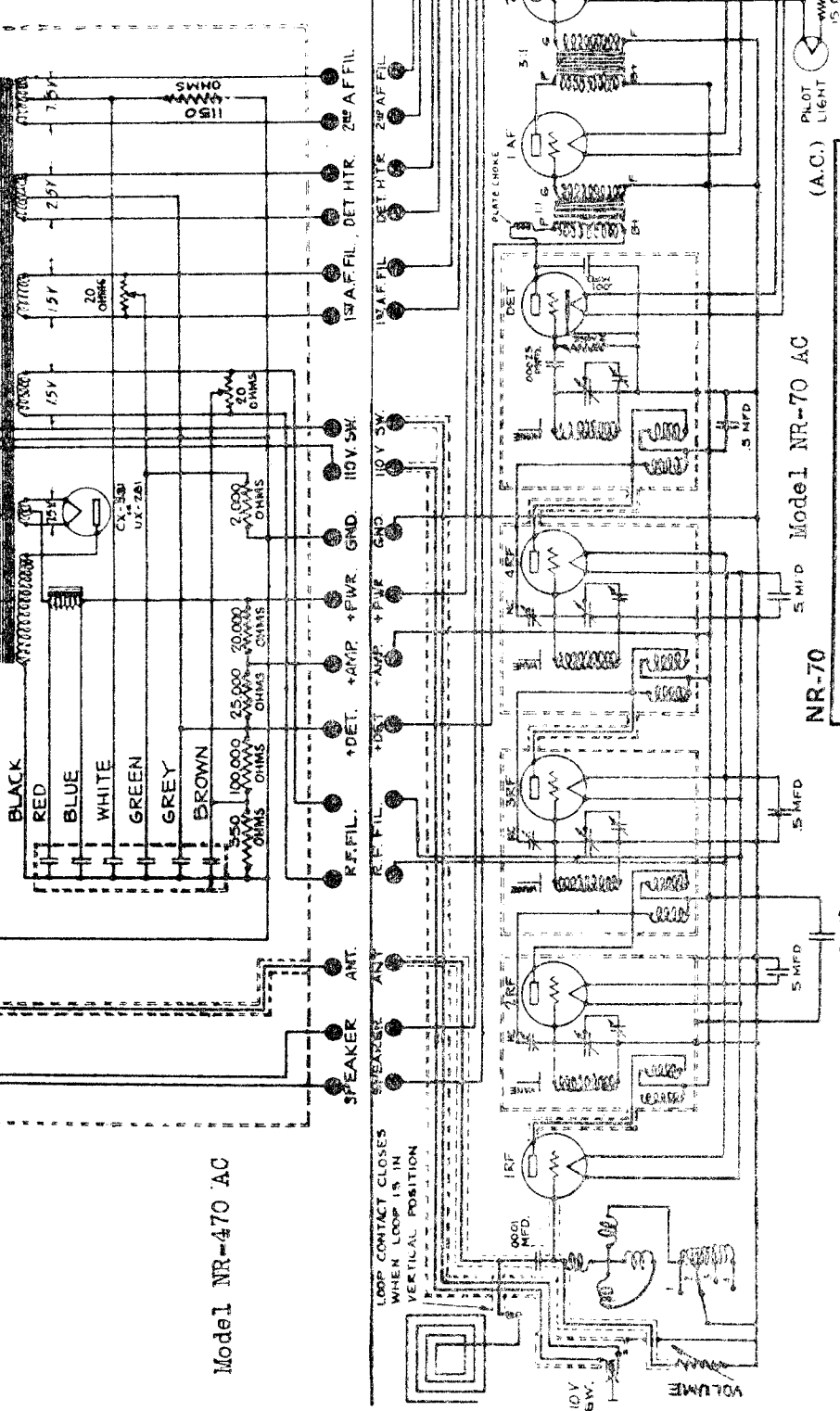


FREED RADIO AND TELEVISION CORP.

MODEL NR-70 AC
Receiver
MODEL NR-470 AC
Power Pack

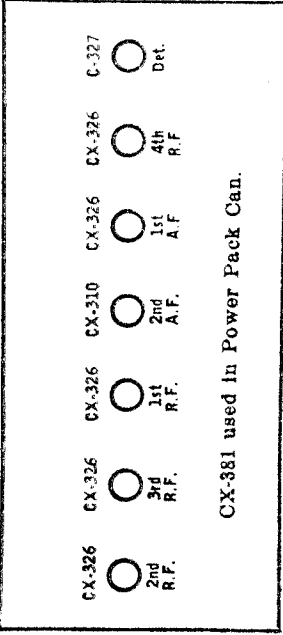
NOTE:
2,000, 550 & 1100 OHM
RESISTANCES WOUND
ON SAME TUBE.
20,000 OHM RESISTANCE
COMPOSED OF 2-10,000
OHM RESISTANCES
CONNECTED IN SERIES

A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED.



NR-70 Model NR-70 AC

PLOT LIGHT (A.C.) 15 OHMS



CX-381 used in Power Pack Can.

Model NR-470 AC

LOOP CONTACT CLOSES
WHEN LOOP IS IN
VERTICAL POSITION

VOLUME

BLACK
RED
BLUE
WHITE
GREEN
GREY
BROWN

SPEAKER ANT. GND.

SPEAKER ANT.

SPEAKER ANT.

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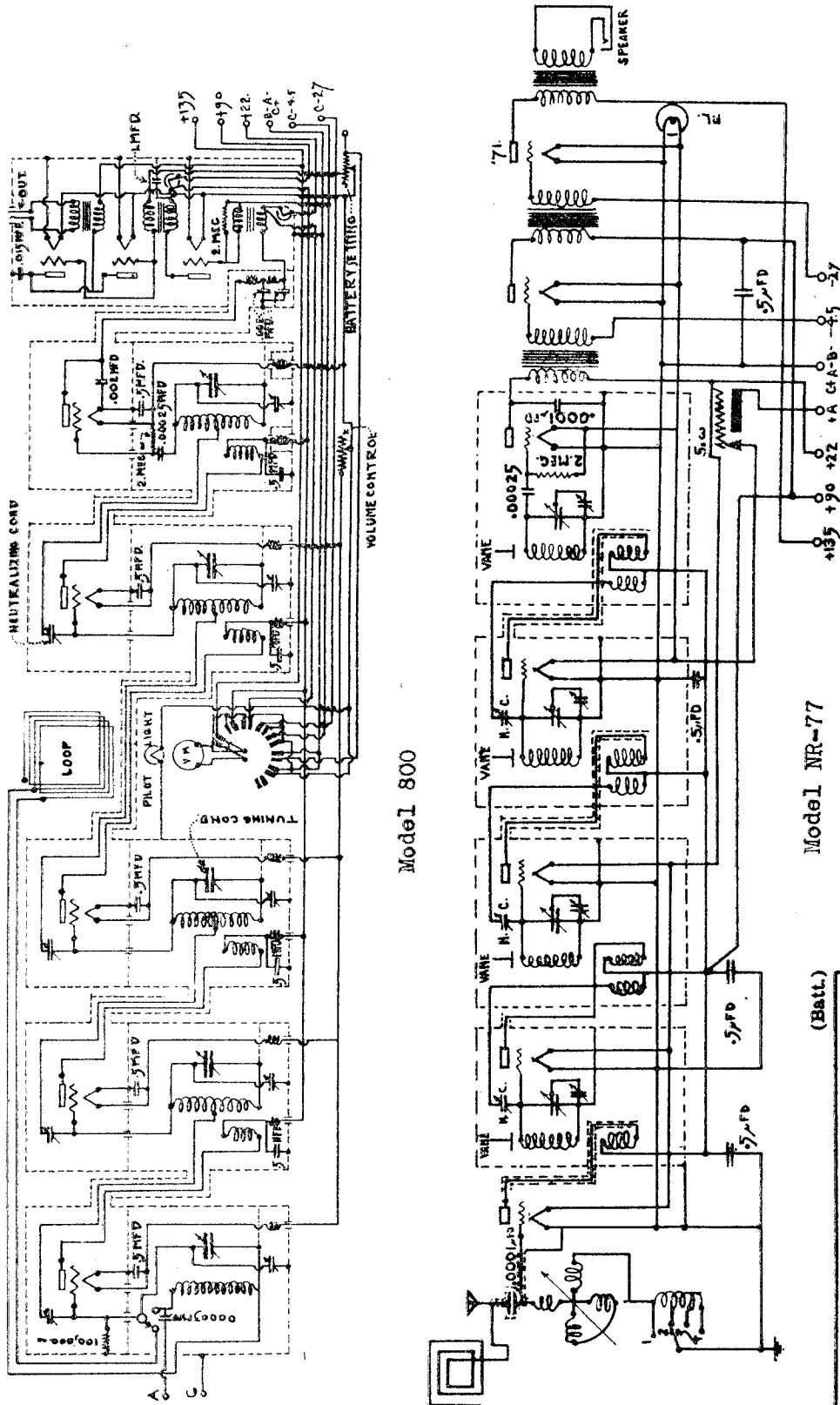
SPEAKER ANT.

SPEAKER ANT.

SPEAKER ANT.

MODEL NR-77
MODEL 800

FREED RADIO AND TELEVISION CORP.

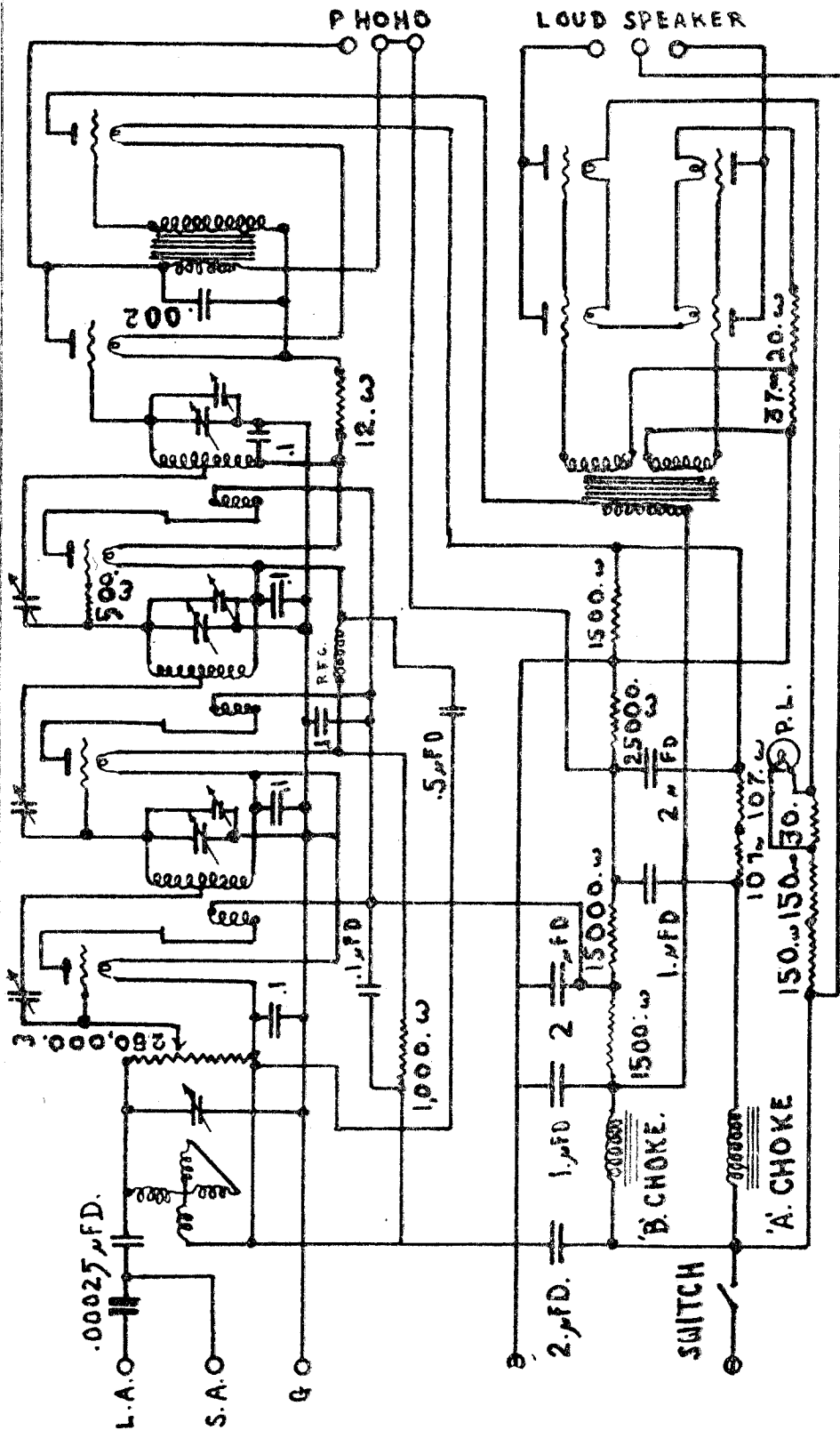


NR-77 (Batt.)

CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A
	2nd R.F.	3rd R.F.	1st R.F.	2nd A.F.	1st A.F.	3rd A.F.	4th R.F.	Bul.	

FREED RADIO AND TELEVISION CORP.

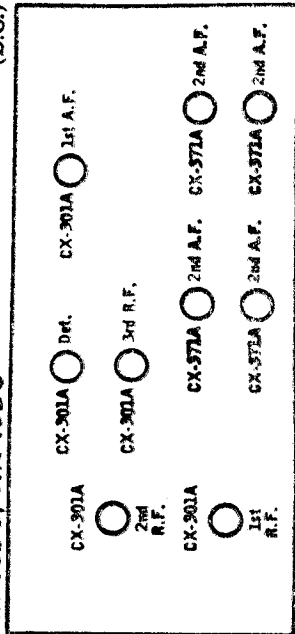
MODEL NR-78 DC
NR-79 DC



FREED-EISEMANN—Model 78 D. C.
Line Voltage 110 D. C.—Set on D. C. Volt Tap—Volume Control Position Full On

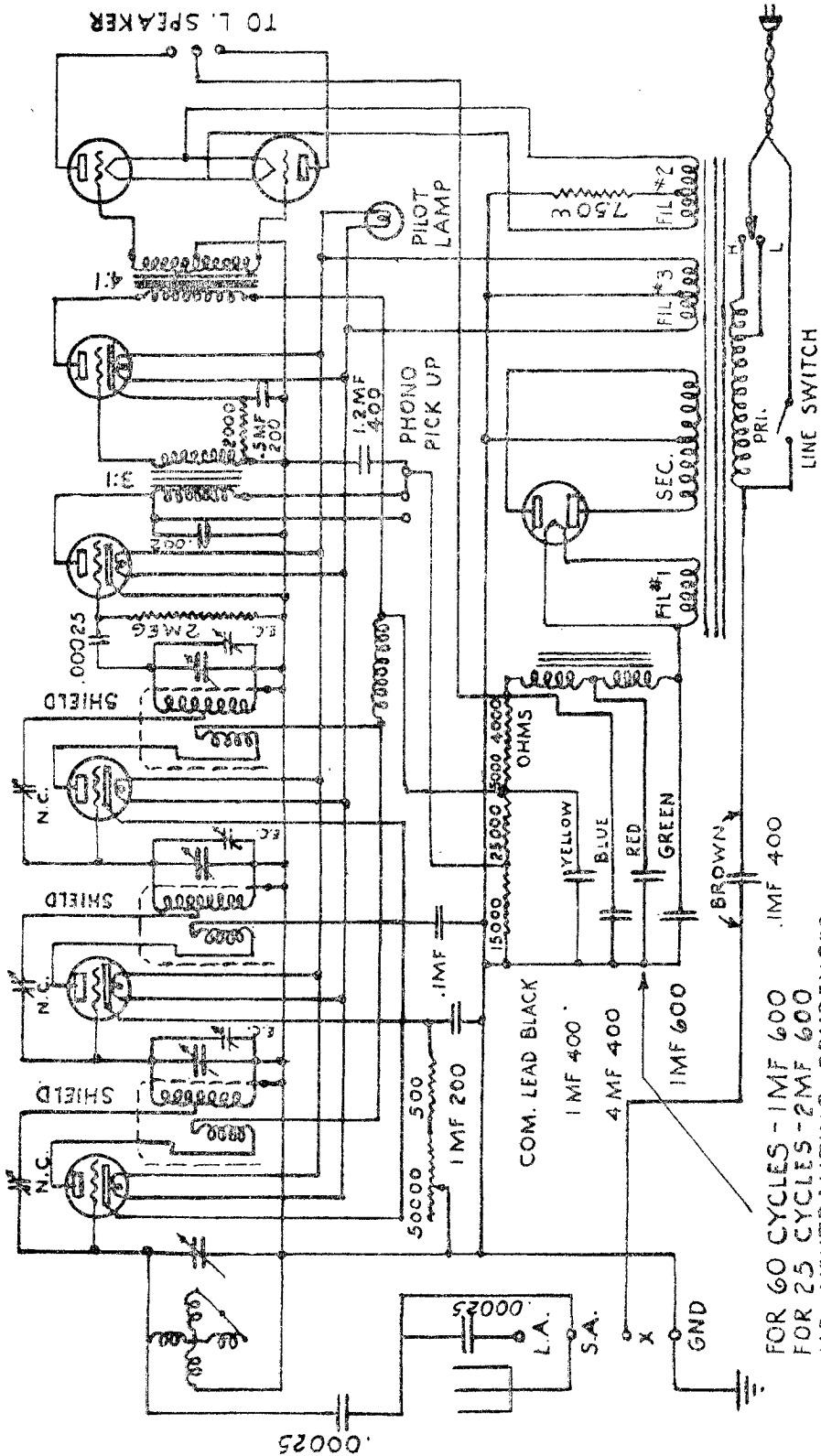
TYPE	NO. IN SET	POSITION	READINGS PLUG IN SOCKET OF SET				TUBE IN TESTER			
			TUBE OUT	TUBE IN	TESTER	SOCKET	TESTER	SOCKET	TESTER	SOCKET
201A	1	1st A.F.	4.5	75	4.2	3.7	4.0	3.5	4.0	3.5
201A	1	2nd A.F.	4.5	75	0	3.7	4.0	3.5	4.0	3.5
201A	1	3rd A.F.	4.5	31	3.5	0.5	2.9	2.4	2.4	2.4
201A	1	5th A.	4.5	75	4.0	1.0	3.5	2.5	2.5	2.5
171A	1	2nd A.	4.5	75	15	6.0	24	18.0	18.0	18.0
171A	1	3rd A.	4.5	75	15	6.0	24	18.0	18.0	18.0
171A	1	5th A.	4.5	75	15	6.0	24	18.0	18.0	18.0

NR-78DC, NR-79DC (D.C.)



MODEL NR-78 AC
NR-79 AC

FREED RADIO AND TELEVISION CORP.



FREED-EISEMANN—Model 78-79
Line Voltage 116—Set on High Volt Tap—Volume Control Position Full On

TYPE	LINE VOLTAGE		LINE CURRENT		WATTAGE	WATTAGE PER AMPERE	WATTAGE PER AMPERE PER AMPERE	WATTAGE PER AMPERE PER AMPERE	WATTAGE PER AMPERE PER AMPERE	WATTAGE PER AMPERE PER AMPERE
	MIN.	MAX.	MIN.	MAX.						
1	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
2	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
3	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
4	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
5	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
6	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
7	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
8	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
9	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
10	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
11	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
12	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
13	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
14	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
15	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
16	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
17	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
18	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
19	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
20	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
21	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
22	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
23	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
24	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
25	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
26	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
27	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
28	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
29	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
30	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
31	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
32	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
33	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
34	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
35	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
36	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
37	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
38	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
39	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
40	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
41	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
42	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
43	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
44	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
45	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
46	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
47	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
48	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
49	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
50	116	116	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07

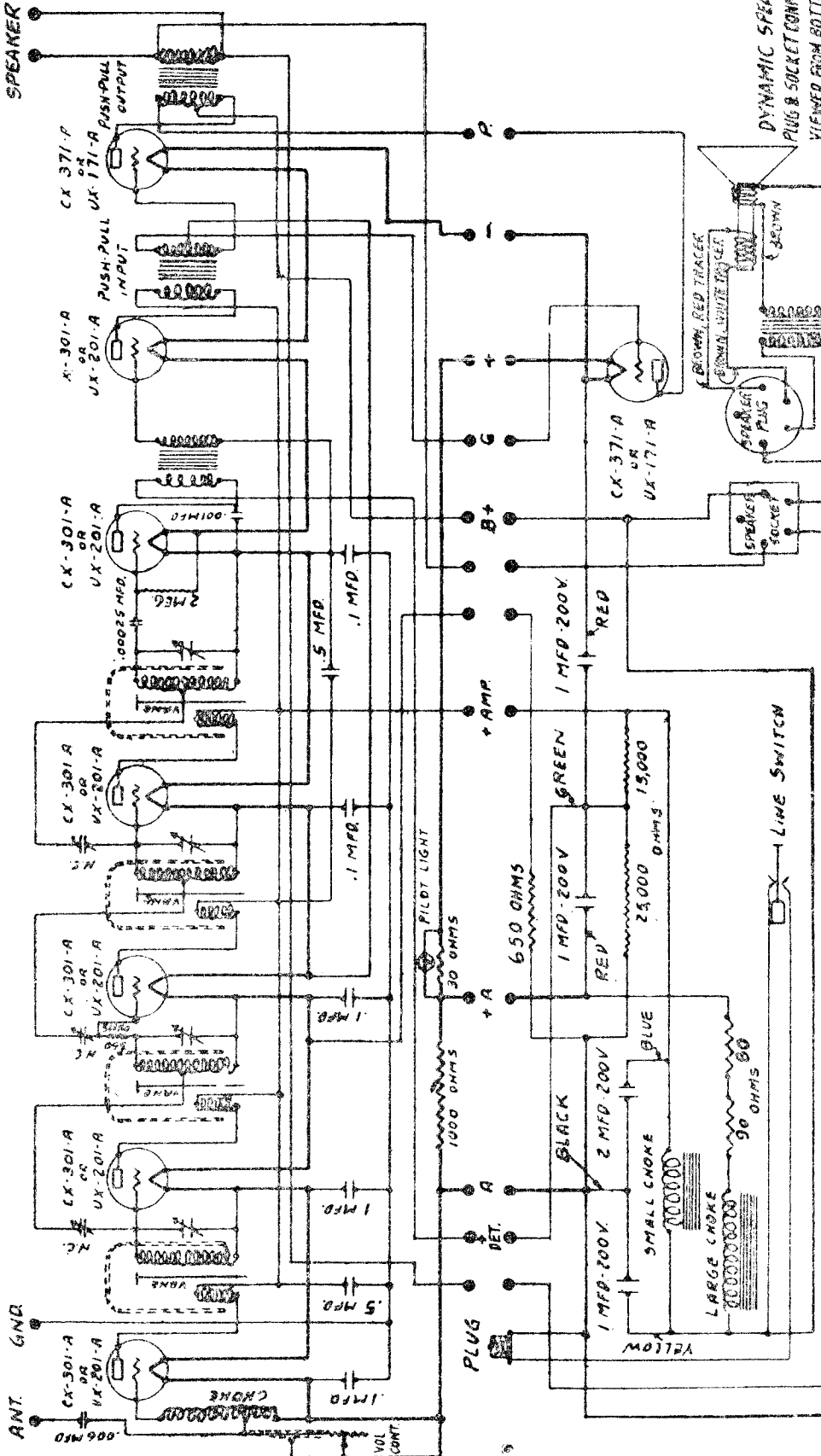
FOR 60 CYCLES - IMF 600
FOR 25 CYCLES - 2MF 600
NC - NEUTRALIZING CONDENSER
EC - EQUALIZING CONDENSER

NR-78, NR-79 (A.C.)

CX-382
C-327 0 D4K
C-345 2M A.F.
C-327 1M R.F.
C-345 2M A.F.
C-327 2M R.F.
C-345 1M A.F.
C-327 1M R.F.

FREED RADIO AND TELEVISION CORP.

MODEL NR-80 DC



Free-Edman

JUNIOR ST. & LIBERTY AVE. BROOKLYN NEW YORK

SCHEMATIC WIRING DIAGRAM

NR-80 D.C. TYPE

DATE 6-20-39

SCALE

ON TABLE			APPROVAL		
DATE	BY	TYPE	DATE	BY	TYPE
6-18-39	SAP	APP'D	6-20-39	[Signature]	APPROVAL
7-14-39	[Signature]	TRACER	7-14-39	[Signature]	TRACER
6-26-39	[Signature]	CHECKER	6-26-39	[Signature]	CHECKER
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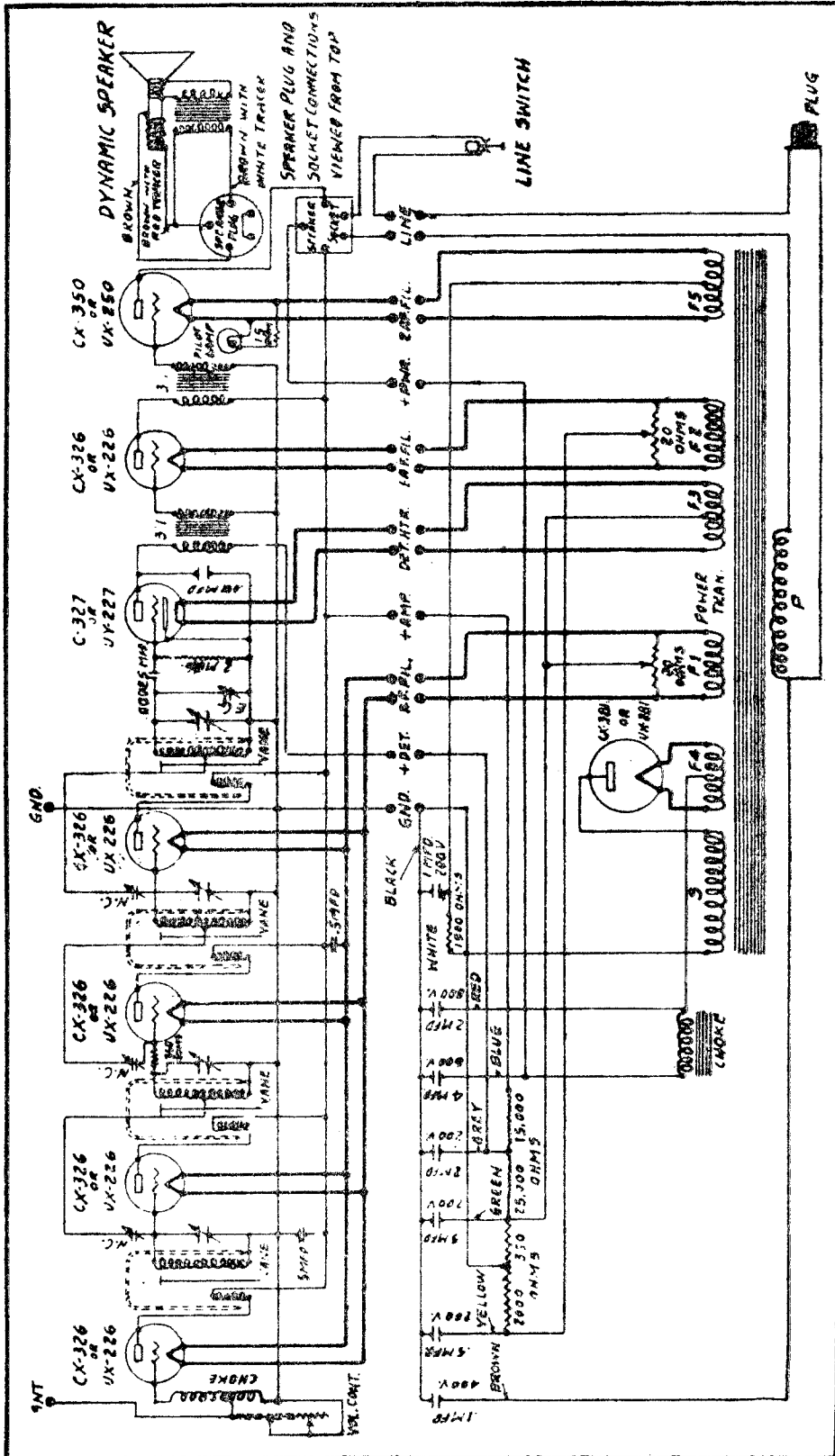
(D.C.)

NR-80DC

<input type="radio"/> CX-301A or CX-112A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A
<input type="radio"/> CX-371A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A	<input type="radio"/> CX-301A
<input type="radio"/> 1st A.F.	<input type="radio"/> 1st R.F.	<input type="radio"/> 2nd R.F.	<input type="radio"/> 3rd R.F.	<input type="radio"/> 4th R.F.
<input type="radio"/> 2nd A.F.	<input type="radio"/> Det.	<input type="radio"/> Det.	<input type="radio"/> 1st R.F.	<input type="radio"/> 2nd R.F.
<input type="radio"/> CX-371A	<input type="radio"/> 2nd A.F.	<input type="radio"/> 2nd A.F.	<input type="radio"/> 2nd A.F.	<input type="radio"/> 2nd A.F.

FREED RADIO AND TELEVISION CORP.

MODEL NR-85 AC



Freed-Eisemann
 1100 ST. A. LIBERTY AVE. BROOKLYN, NEW YORK

SCHMATIC WIRING DIAGRAM
NR-85 TYPE

SCALE DATE 6-14-28

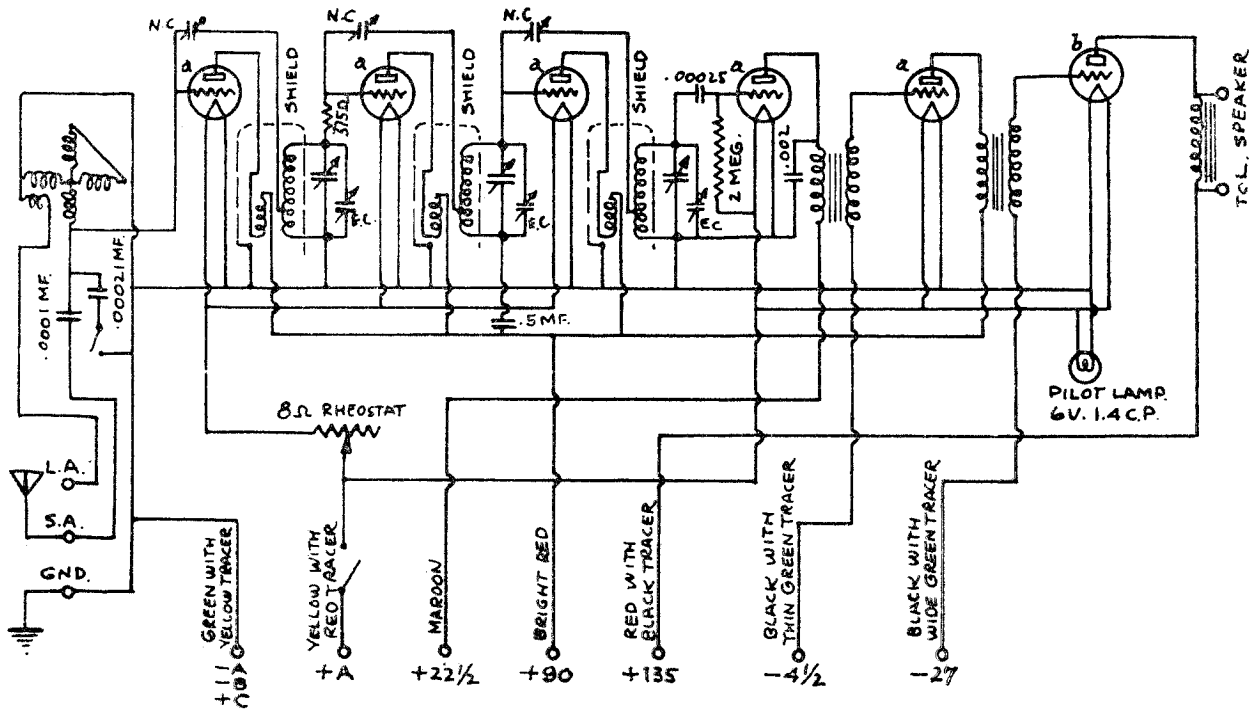
(A.C.) FREED-EISEMANN—Model NR-85
 Line Voltage 120

TYPE OF CHOKER	TYPE OF TUBE	POSITION (1st, 2nd, etc.)	VOLTAGE OUT			CURRENT IN TUBES			WATTAGE		
			VOLTS	AMPS	WATTS	VOLTS	AMPS	WATTS	VALVE	WATT	CHARACTER
	226	1st R.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	PLATE
	226	2nd R.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	SCREEN
	226	3rd R.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	GRID
	226	4th R.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	CONTROL
	226	Detector	2.5	110	2.20	35	0.0	3.8	1.0	0.0	DIODE
	226	1st A.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	PLATE
	226	2nd A.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	SCREEN
	226	3rd A.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	GRID
	226	4th A.F.	1.5	112	1.45	100	6.0	5.7	8.2	5.5	CONTROL
	226	Rectifier	7.5	360	7.45	540	54.0	39.0	43.5	14.0	DIODE
	226	Rectifier	7.5	360	7.45	540	54.0	39.0	43.5	14.0	DIODE

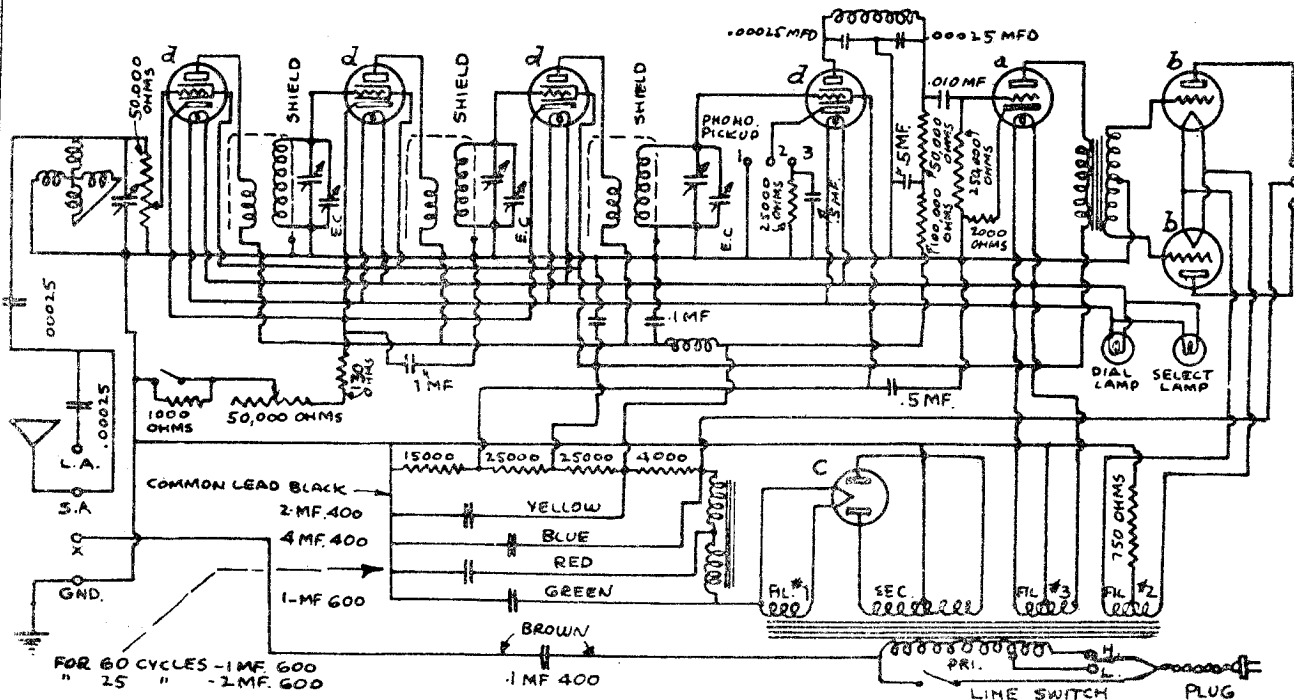
- NR-85
- CX-350 1st A.F.
 - CX-326 2nd R.F.
 - CX-326 3rd R.F.
 - CX-326 4th R.F.
 - C-327 Det.
 - CX-326 1st R.F.
 - CX-326 2nd R.F.
 - CX-326 3rd R.F.
 - CX-326 4th R.F.
 - CX-326 5th R.F.
 - CX-326 6th R.F.
 - CX-326 7th R.F.
 - CX-326 8th R.F.
 - CX-326 9th R.F.
 - CX-326 10th R.F.
 - CX-326 11th R.F.
 - CX-326 12th R.F.
 - CX-326 13th R.F.
 - CX-326 14th R.F.
 - CX-326 15th R.F.
 - CX-326 16th R.F.
 - CX-326 17th R.F.
 - CX-326 18th R.F.
 - CX-326 19th R.F.
 - CX-326 20th R.F.
 - CX-326 21st R.F.
 - CX-326 22nd R.F.
 - CX-326 23rd R.F.
 - CX-326 24th R.F.
 - CX-326 25th R.F.
 - CX-326 26th R.F.
 - CX-326 27th R.F.
 - CX-326 28th R.F.
 - CX-326 29th R.F.
 - CX-326 30th R.F.
 - CX-326 31st R.F.
 - CX-326 32nd R.F.
 - CX-326 33rd R.F.
 - CX-326 34th R.F.
 - CX-326 35th R.F.
 - CX-326 36th R.F.
 - CX-326 37th R.F.
 - CX-326 38th R.F.
 - CX-326 39th R.F.
 - CX-326 40th R.F.
 - CX-326 41st R.F.
 - CX-326 42nd R.F.
 - CX-326 43rd R.F.
 - CX-326 44th R.F.
 - CX-326 45th R.F.
 - CX-326 46th R.F.
 - CX-326 47th R.F.
 - CX-326 48th R.F.
 - CX-326 49th R.F.
 - CX-326 50th R.F.

MODEL NR-53
MODEL NR-90-S

FREED RADIO AND TELEVISION CORP.



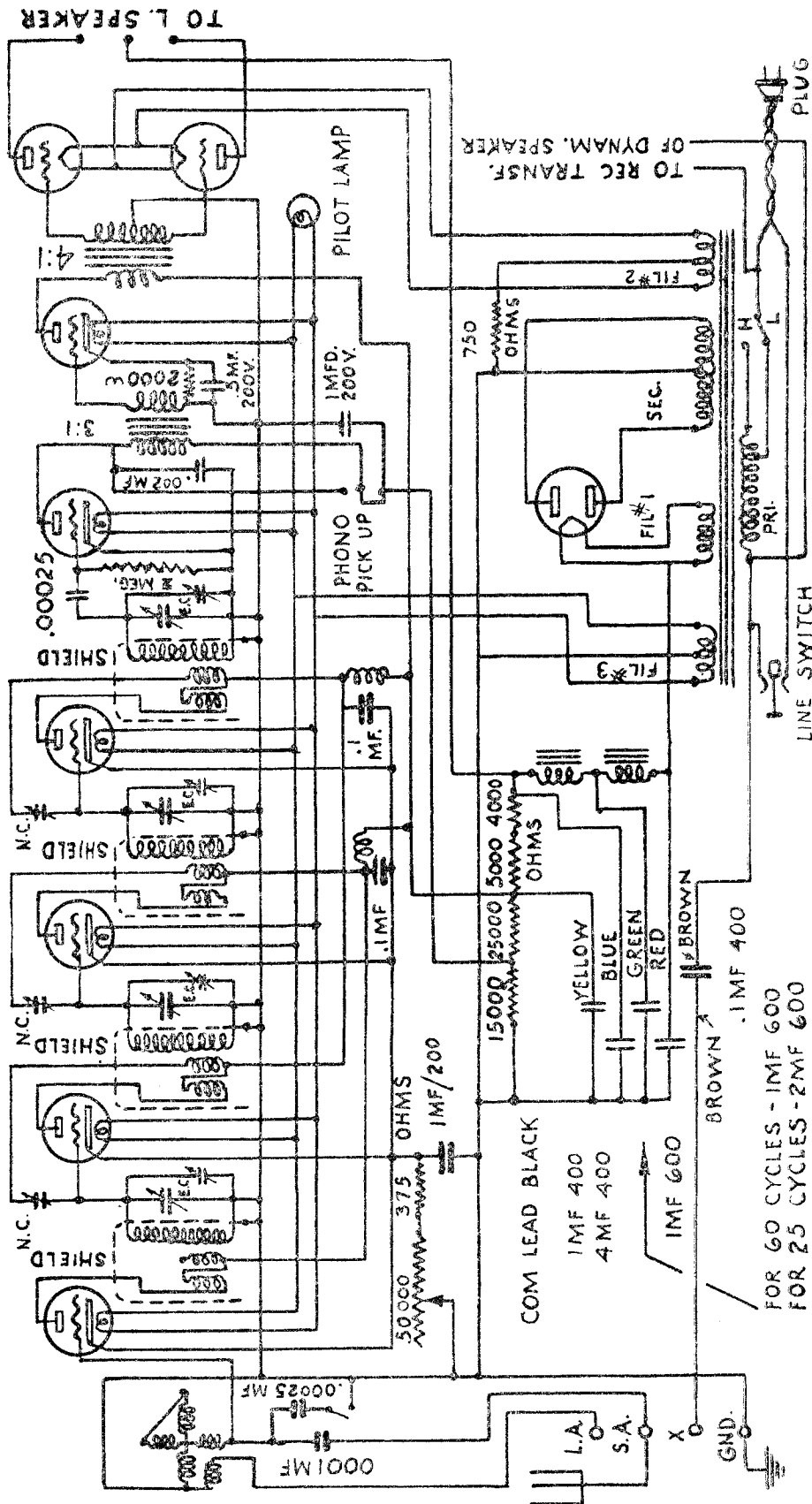
Model NR-53



Model NR-90-S

FREED RADIO AND TELEVISION CORP.

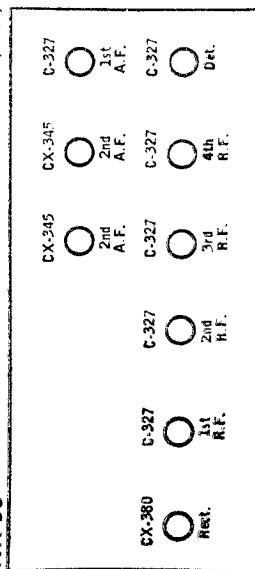
MODEL NR-95 AC



FREED-BISEMANN—Model 95
Line Voltage 116—Set on High Volt Tap—Volume Control Position Full On

TUBE	TYPE	POSITION	TUBE OUT			TUBE IN TESTER			SCREEN GRID	PLATE	M.A. DRIFT	M.A. CHANGE	OHMS	VOLTS
			A	B	C	A	B	C						
227	1B1	PP	2.40	76	2.25	71	4	5	2.8	5.6	2.8	2.0	2.8	2.8
228	2N1	PP	2.40	75	2.25	71	4	5	2.8	5.6	2.8	2.0	2.8	2.8
229	2Y1	PP	2.40	75	2.25	71	4	5	2.8	5.6	2.8	2.0	2.8	2.8
227	6X4	PP	2.40	75	2.25	71	4	5	2.8	5.6	2.8	2.0	2.8	2.8
227	300	PP	2.40	26	2.25	15	1.5	1.0	1.7	1.7	1.7	1.7	1.7	1.7
227	1A1	A	2.40	85	2.25	67	4	5	2.4	4.8	2.4	2.4	2.4	2.4
245	2M2	A	2.57	208	2.37	183	2.5	22	22	22	22	22	22	22
245	2M2	A	2.57	208	2.37	183	2.5	22	22	22	22	22	22	22
390	Rect.	Rect.	5-5	-	4-8	-	-	-	-	-	-	-	-	-

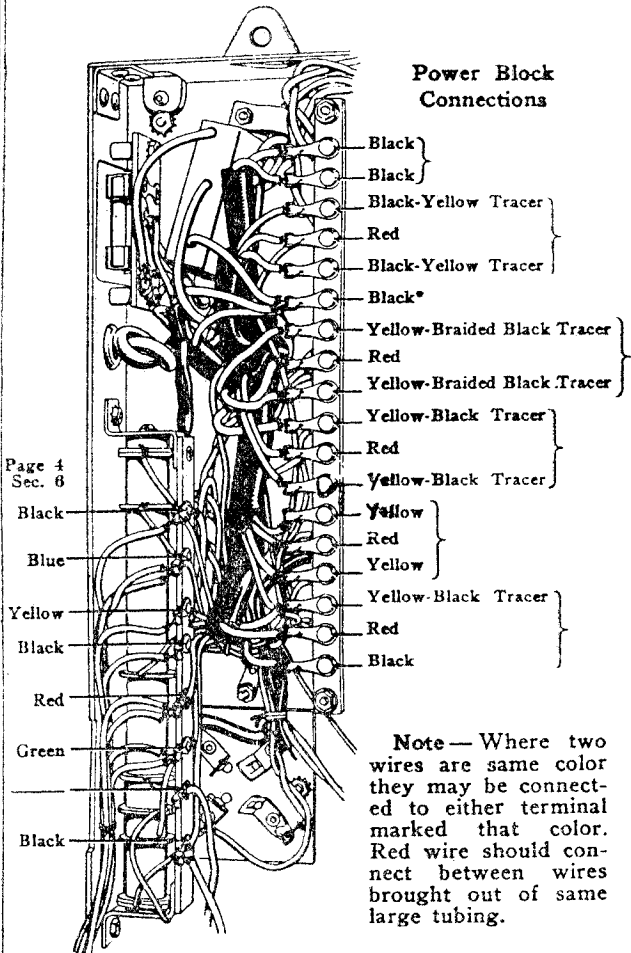
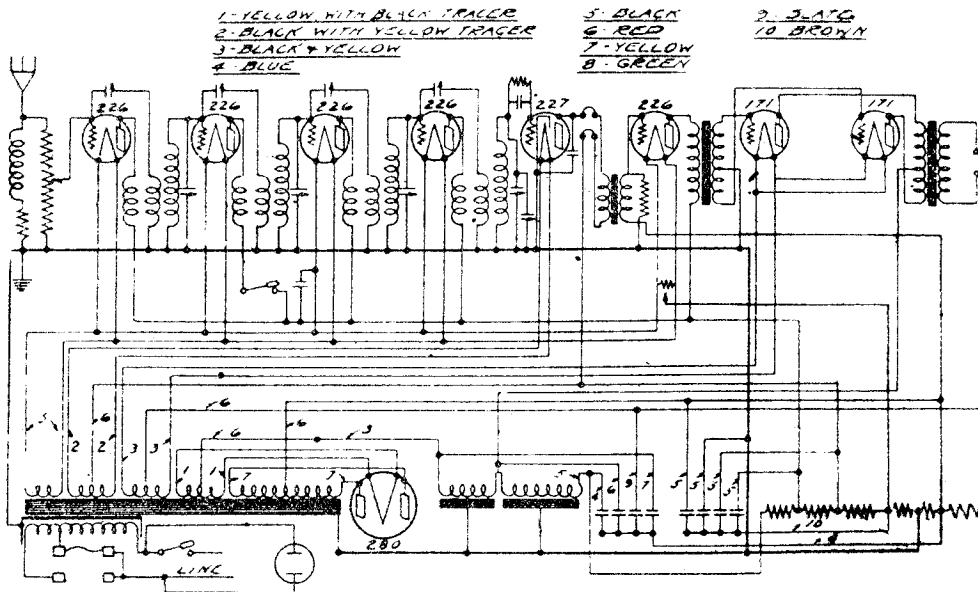
NR-95 (A.C.)



FOR 60 CYCLES - 1MF 600
FOR 25 CYCLES - 2MF 600

JESSE FRENCH & SONS PIANO CO.

MODEL 8 Tube AC



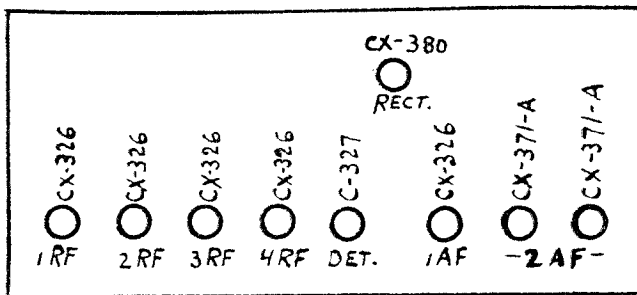
JESSE FRENCH

8 - A.C. Power Set.

Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

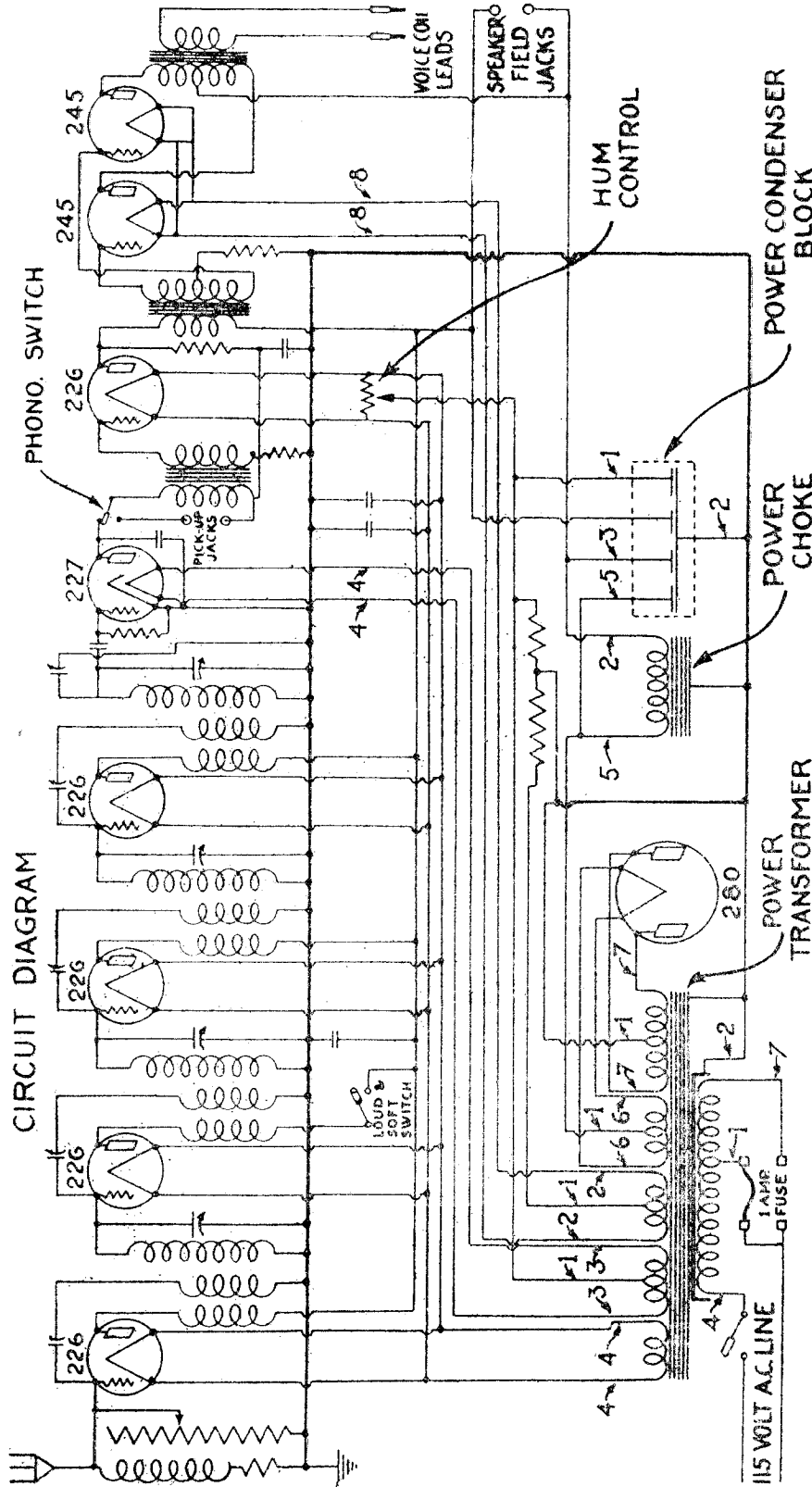
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS, PLUG IN SOCKET OF KEY								
			TUBE OUT				TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE MA GRID TEST	PLATE MA GRID CHANGE	PLATE MA GRID CHANGE
1	226	1st. R.F.	1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
2	226	2nd. R.F.	1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
3	226	3rd. R.F.	1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
4	226	4th. R.F.	1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
5	227	Detector	2.40	125	2.2	25	45	-	1.4	1.4	0.0
6	226	1st. A.F.	1.55	107	1.5	100	7.5	-	3.5	7.0	3.5
7	171A	2nd. A.F.	5.30	170	5.0	158	33	-	18.0	21.0	3.0
8	171A	2nd. A.F.	5.30	170	5.0	158	33	-	18.0	21.0	3.0

Note—Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.



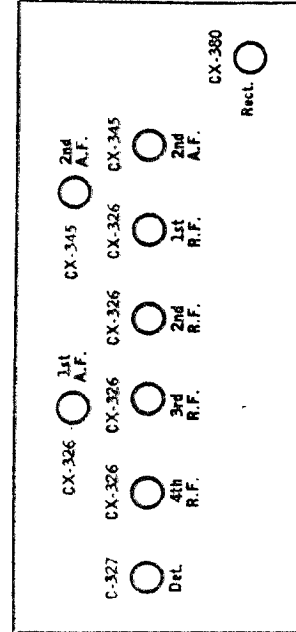
MODEL 5-093

JESSE FRENCH & SONS PIANO CO.



JESSE FRENCH

Model 5-093

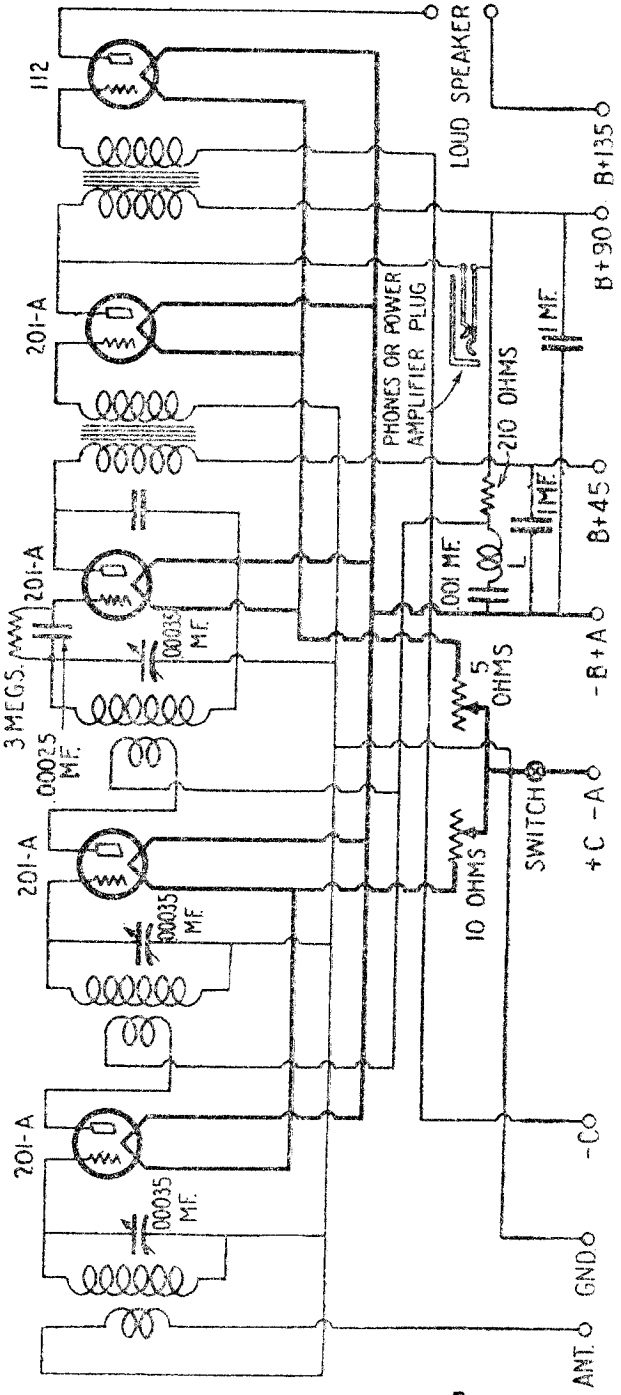


Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage Reading on Audio tubes is low due to the current draw of the set and high resistances in the set.

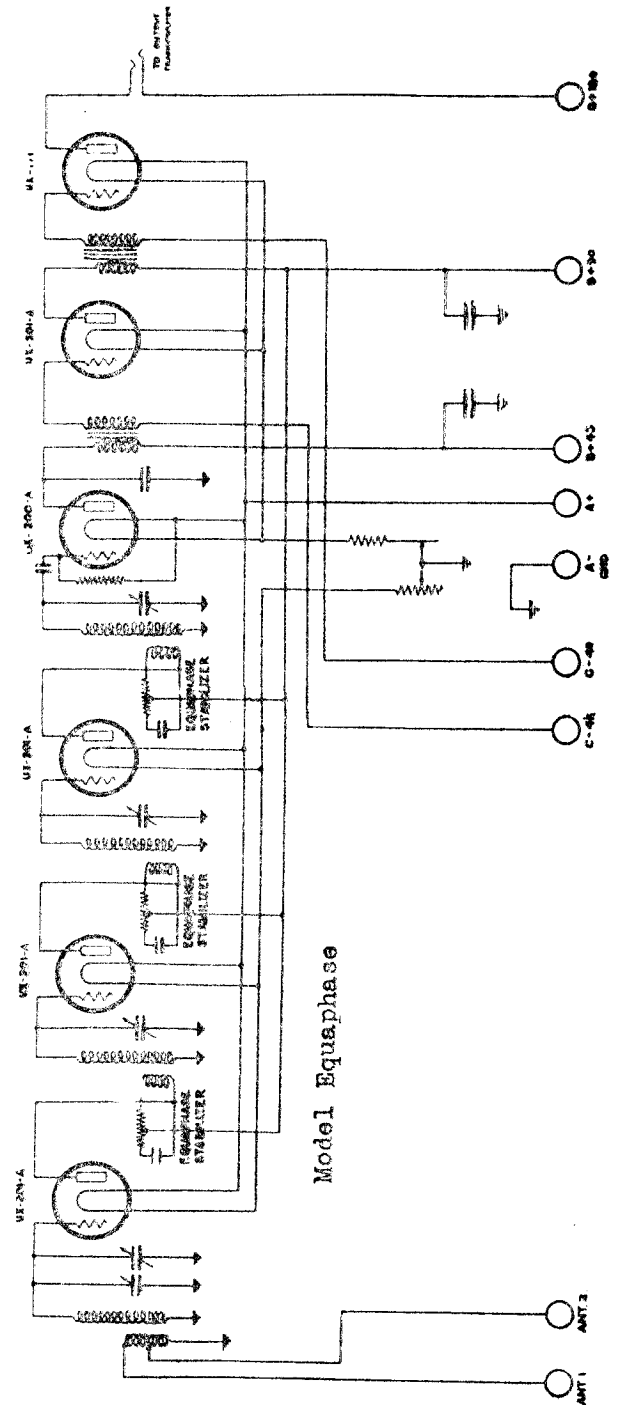
TUBE NO	TYPE OF TUBE	POSITION OF TUBE IN SET	TUBE OUT				RESIDUE PLUG IN SOCKET OF SET				PLATE SCREEN GRID (V)	SCREEN GRID (V)
			A	B	C	D	A	B	C	D		
1	226	1st AF	1.5	1.4	1.3	1.2	5	9	4	4	4	4
2	226	2nd AF	1.5	1.4	1.3	1.2	5	9	4	4	4	4
3	226	3rd AF	1.5	1.4	1.3	1.2	5	9	4	4	4	4
4	226	4th AF	1.5	1.4	1.3	1.2	5	9	4	4	4	4
5	226	1st R.F.	1.5	1.4	1.3	1.2	5	9	4	4	4	4
6	226	2nd R.F.	1.5	1.4	1.3	1.2	5	9	4	4	4	4
7	226	3rd R.F.	1.5	1.4	1.3	1.2	5	9	4	4	4	4
8	226	4th R.F.	1.5	1.4	1.3	1.2	5	9	4	4	4	4
9	280	280T	2.0	1.7	1.4	1.1	6.5	4.5	5.5	5	5	5
10	245	245T	2.0	1.7	1.4	1.1	6.5	4.5	5.5	5	5	5
11	245	245T	2.0	1.7	1.4	1.1	6.5	4.5	5.5	5	5	5
12	280	280T	2.0	1.7	1.4	1.1	6.5	4.5	5.5	5	5	5

CHARLES FRESHMAN CO., INC.

MODEL Masterpiece
MODEL Equaphase



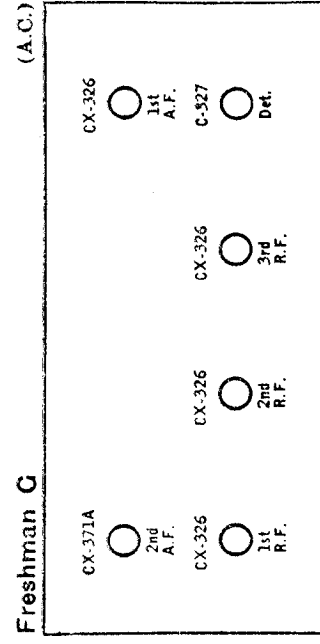
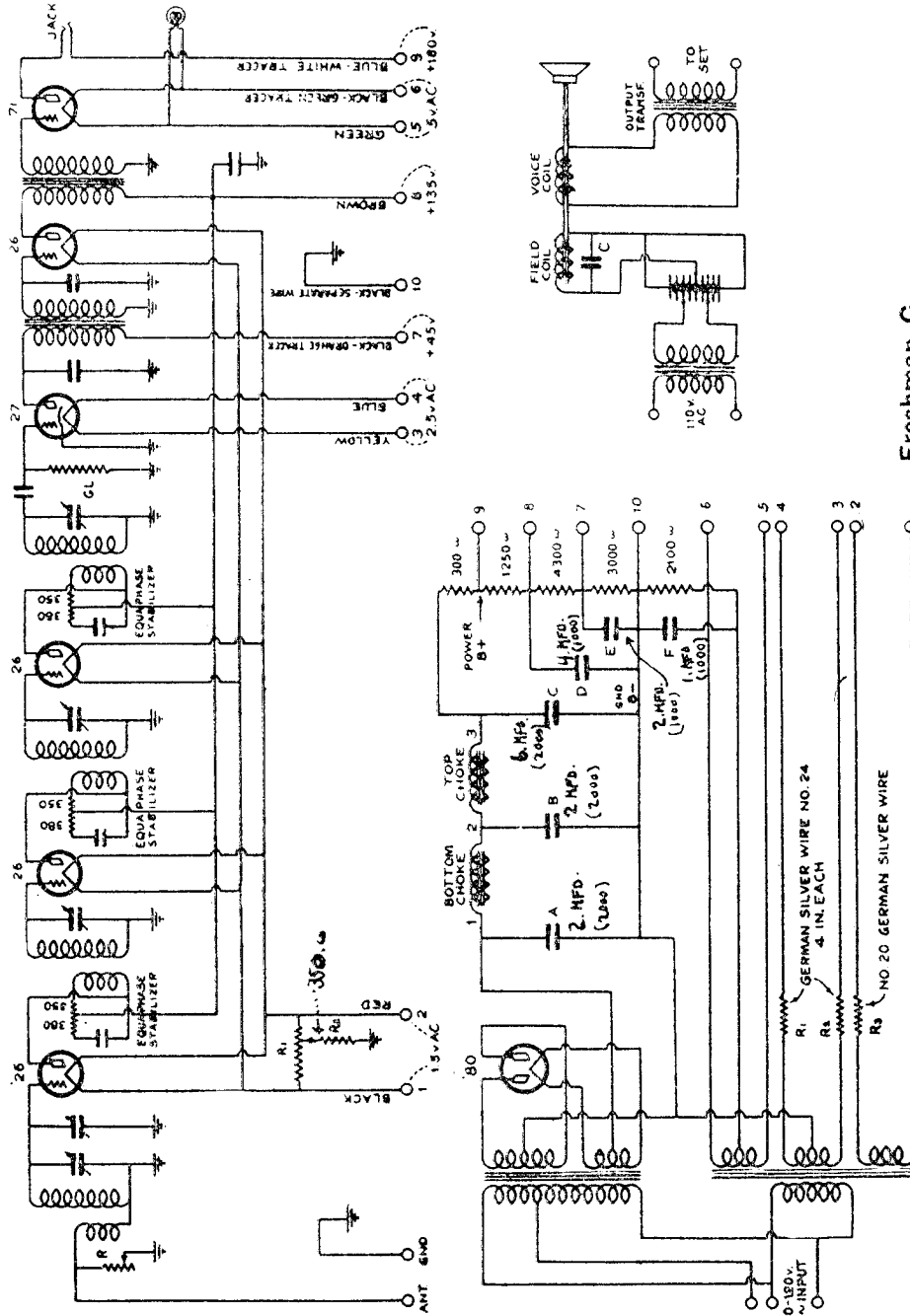
Model
Masterpiece



Model Equaphase

MODEL G

CHARLES FRESHMAN CO., INC.



Freshman G (A.C.)

FRESHMAN—Model "G"
Line Voltage 120—120 Volt Tap

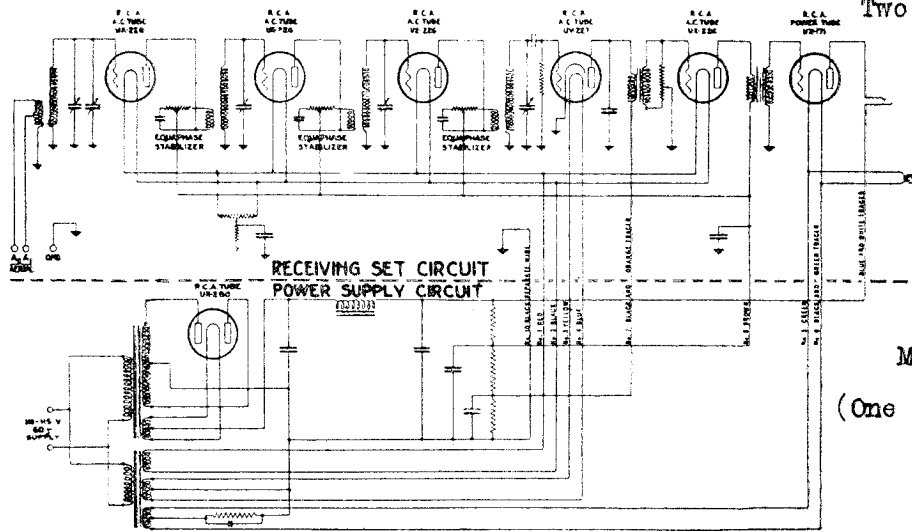
TUBE NO. UNDER	TYPE OF TUBE	POSITION OF TUBE IN SOCKET OF SET	TUBE OUT		TUBE IN TESTER		RESOURCES PLUG IN SOCKET OF SET		
			VOLTS	WATTS	VOLTS	WATTS	PLATE VOLTS	NORMAL BIAS TEST	
226	1st. A.F.	1	1.45	1.35	1.35	9	5	9	4
226	2nd. R.F.	2	1.45	1.35	1.35	9	5	9	4
226	3rd. R.F.	3	1.45	1.35	1.35	9	5	9	4
227	Detector	4	2.5	1.40	2.00	50	5	5	3
226	1st. A.F.	5	1.45	1.40	1.35	9	5	9	4
171A	2nd. A.F.	6	5.5	200	5.10	175	37	16.0	18.0
280	Rectifier	7	—	5.10	—	—	—	20	—

A. C. operated. To be used with model 9-60-5 Power Supply Unit using a CX-380.

- CX-371A ○ 2nd A.F.
- CX-326 ○ 1st R.F.
- CX-326 ○ 2nd R.F.
- CX-326 ○ 3rd R.F.
- CX-326 ○ 1st A.F.
- C-527 ○ Det.

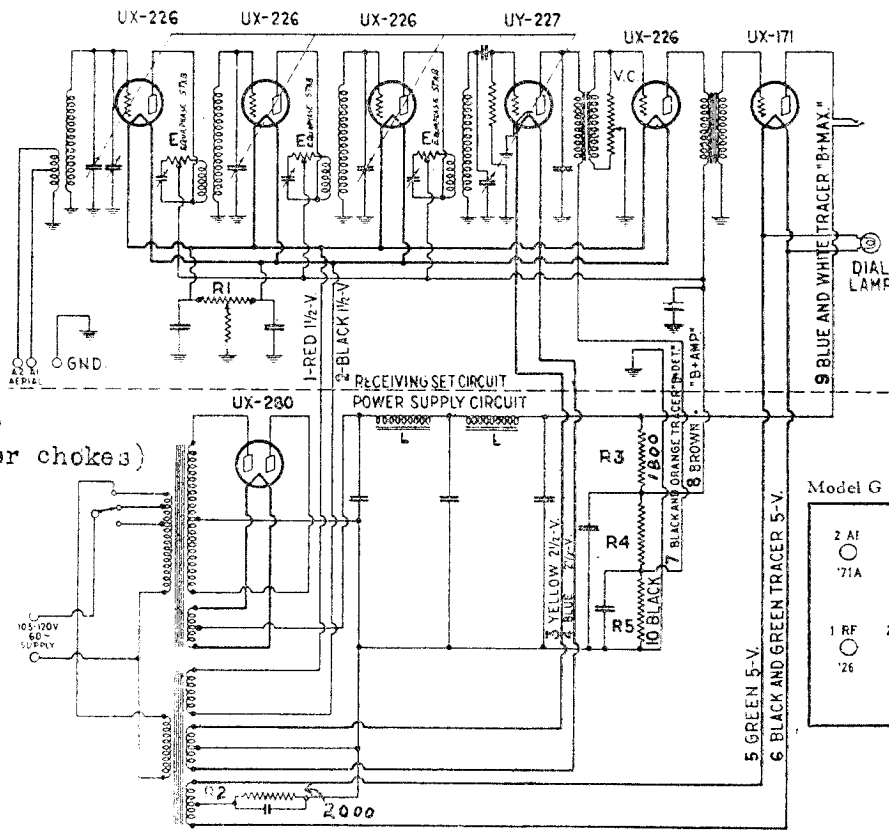
CHARLES FRESHMAN CO., INC.

MODEL G, with
G-60-S Power Unit
Two Types.



Model G.
(One filter choke)

Schematic diagram of Model "G" Chassis and Model G-60-S Power Supply.
Note the one choke coil in Power Supply Circuit.



Model G.
(Two filter chokes)

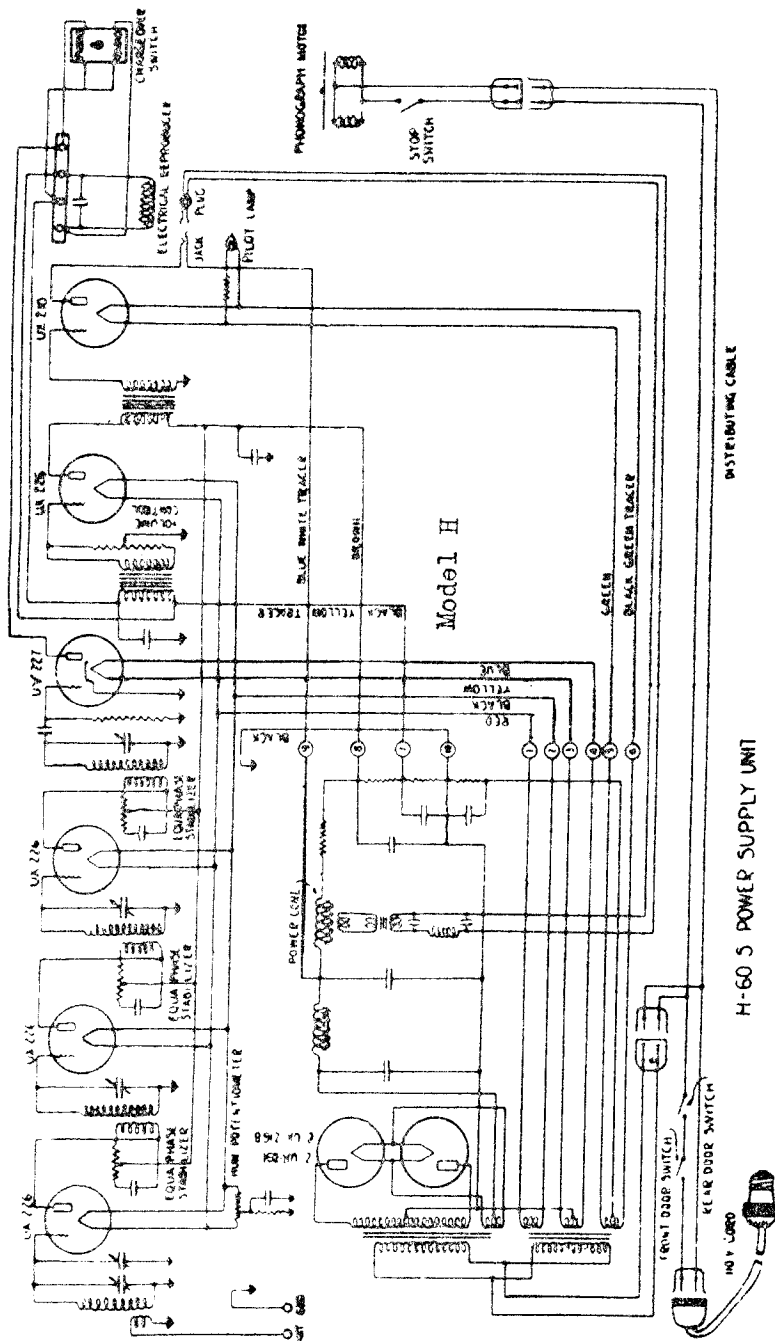
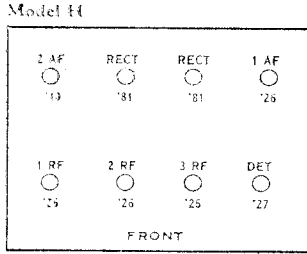
Model G

2 A1 '71A	RECT '80	1 AF '26
1 RF '26	2 RF '26	3 RF '26
		DET '27
FRONT		

Circuits of the Freshman "Model G" Equaphase and the "Model G-60-S" Power Supply Unit.

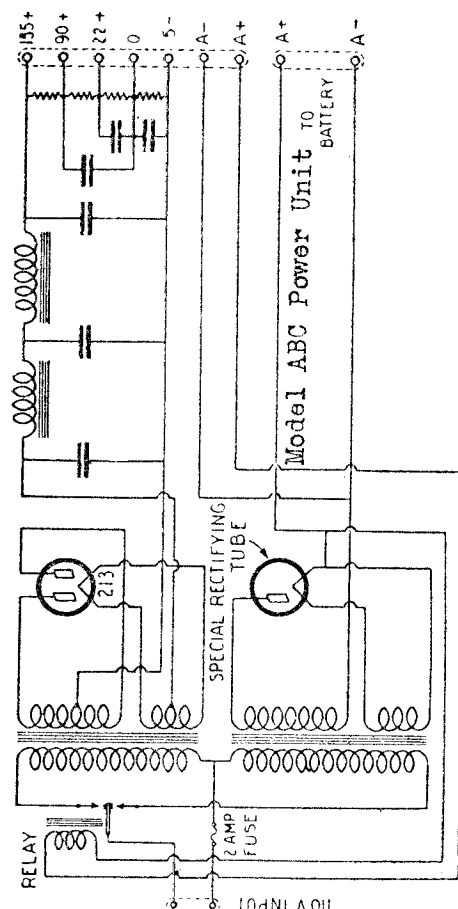
Tube	Fil. Voltage.	Plate Voltage.	Grid Voltage
RF1	1.5	130	7.
RF2	1.5	130	7.
RF3	1.5	130	7.
Det.	2.5	50	0.
AF1	1.5	130	7.
AF2	5.0	180	40.

MODEL H
 MODEL ABC Power Unit CHARLES FRESHMAN CO., INC.



FRESHMAN—Model "H" 6
 Line Voltage 120—120 Volt Tap

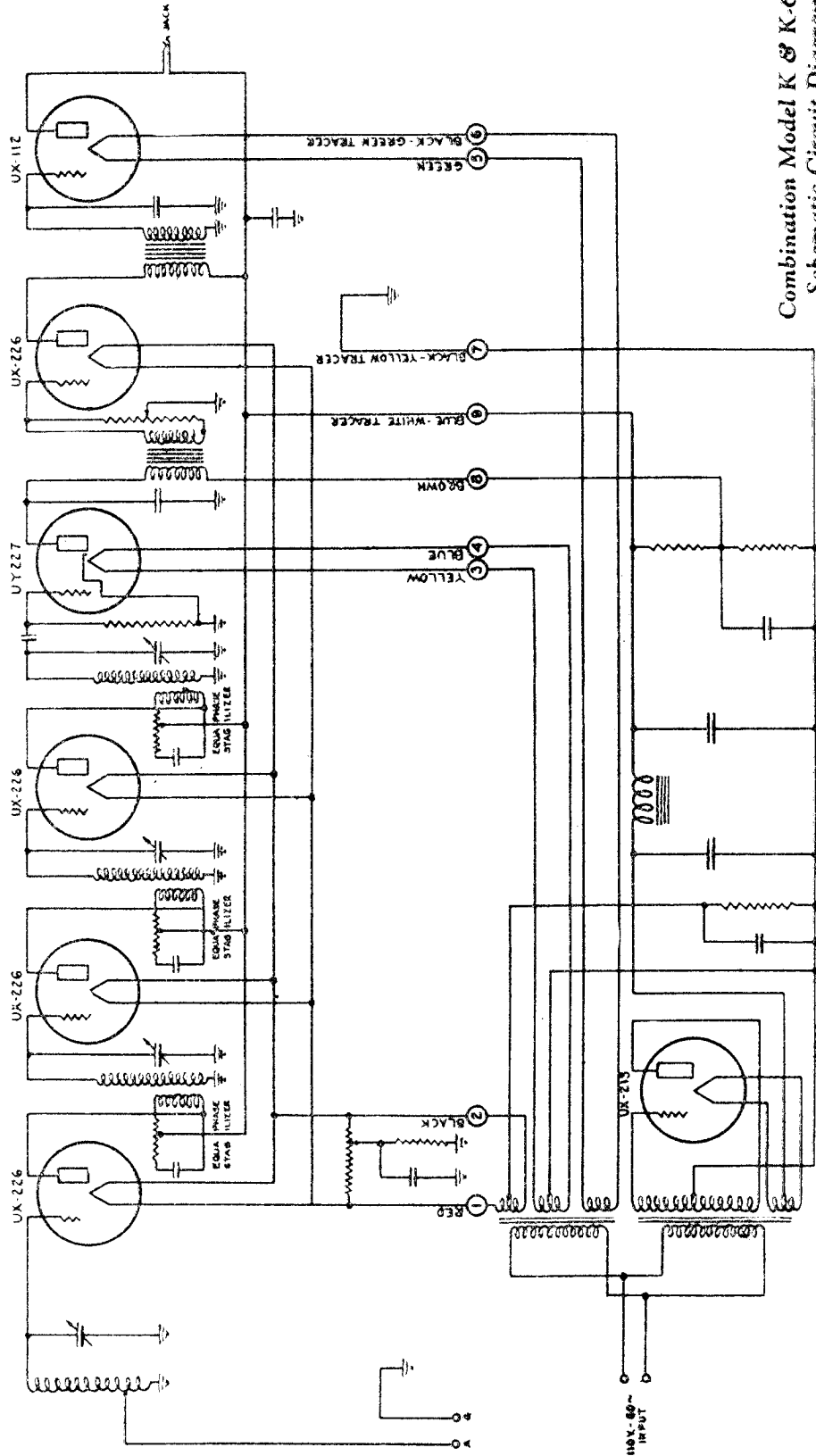
TUBE NO. IN UNIT	TYPE OF TUBE	POSITION	TUBE OUT		READER PULC IN SOCKET OF SET		TUBE IN LETTER		CATHODE TUBES	VOLTAGE	RESISTANCE	PLATE TEST CHARGE
			VOLTS	AMPS	VOLTS	AMPS	RESISTANCE	VOLTS				
226	1ST. A.F.	1	1.45	1.48	1.35	1.40	10	5.3	9.6	4.3		
226	2ND. A.F.	2	1.45	1.48	1.35	1.40	10	5.3	9.6	4.3		
227	3RD. A.F.	3	1.45	1.48	1.35	1.40	10	5.3	9.6	4.3		
228	DETECTOR	4	2.36	1.40	2.00	50	0	2.75	2.75	0.0		
229	1ST. A.F.	5	1.45	1.48	1.35	1.40	10	5.3	9.6	4.3		
230	2ND. A.F.	6	7.5	480	7.5	430	33	21.0	24.0	5.0		
231	RECTIFIER	7	7.5	—	—	—	—	48.0	—	—		



MODEL K

CHARLES FRESHMAN CO., INC.

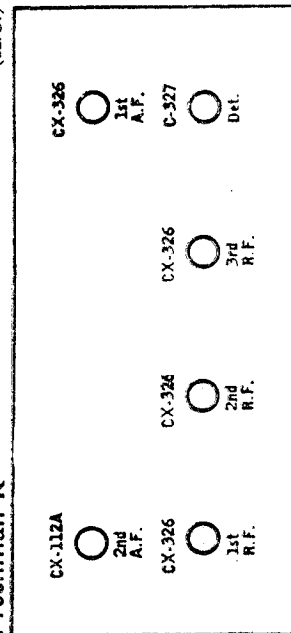
Combination Model K & K-60-S
Schematic Circuit Diagram.



FRESHMAN—Model "K"
Line Voltage 120—120 Volt Tap

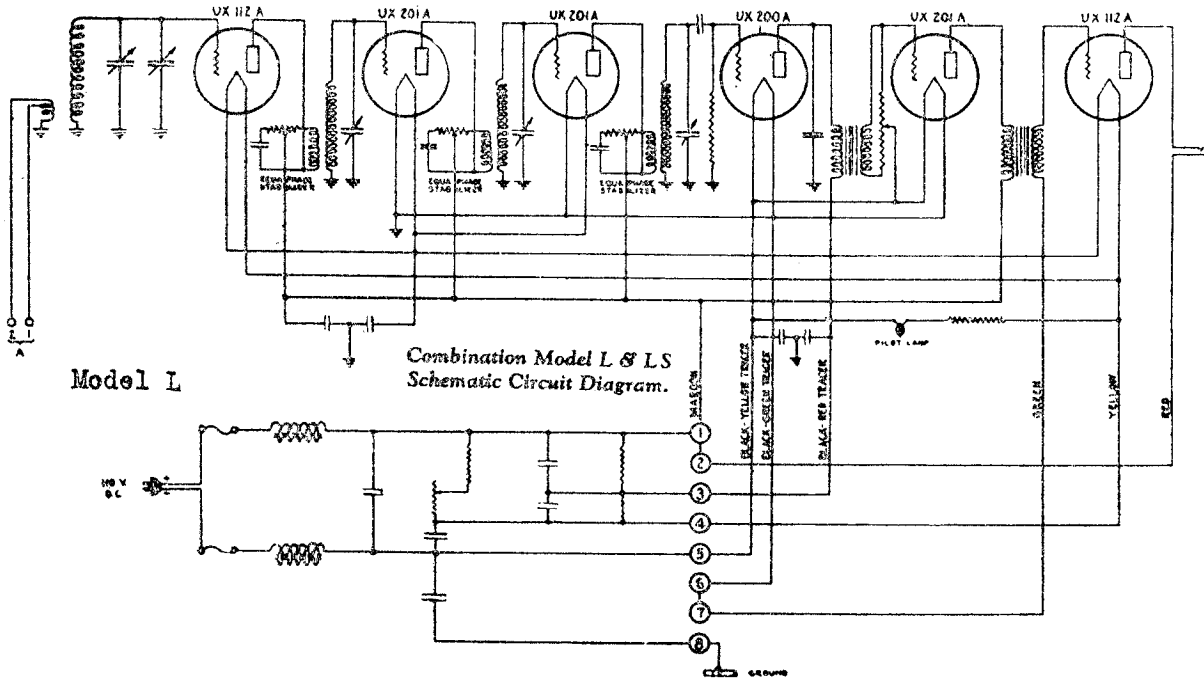
TUBE NO. OR COND.	TYPE OF TUBE	POSITION OF TUBE IN SET	TUNE OUT					RECOMMEND PLUS IN SOCKET OF SET				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	OUTWIND VOLTS	NOMINAL PLATE VOLTS	PLATE TEST	PLATE CURRENT	
226	1B.T. R.F.	1st, 2nd, etc.	1.45	1.45	1.45	1.40	9	5.2	9.4	4.2		
226	2nd. R.F.	2nd. R.F.	1.45	1.45	1.35	1.40	9	5.2	9.4	4.2		
226	3rd. R.F.	3rd. R.F.	1.45	1.45	1.35	1.40	9	5.2	9.4	4.2		
227	Detector	Detector	2.35	1.40	2.00	45	0	2.5	2.5	2.5		
226	1st. A.F.	1st. A.F.	1.45	1.45	1.35	1.40	9	5.2	9.4	4.2		
112A	2nd. A.F.	2nd. A.F.	5.0	1.40	4.7	3.5	12	10.0	14.0	5.0		
250	RECTIFIER	RECTIFIER						20.0	20.0			

Freshman K (A.C.)

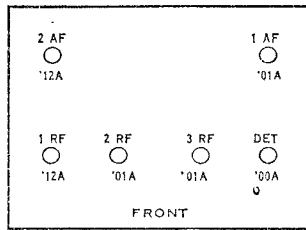


CHARLES FRESHMAN CO., INC.

MODEL L
MODEL N



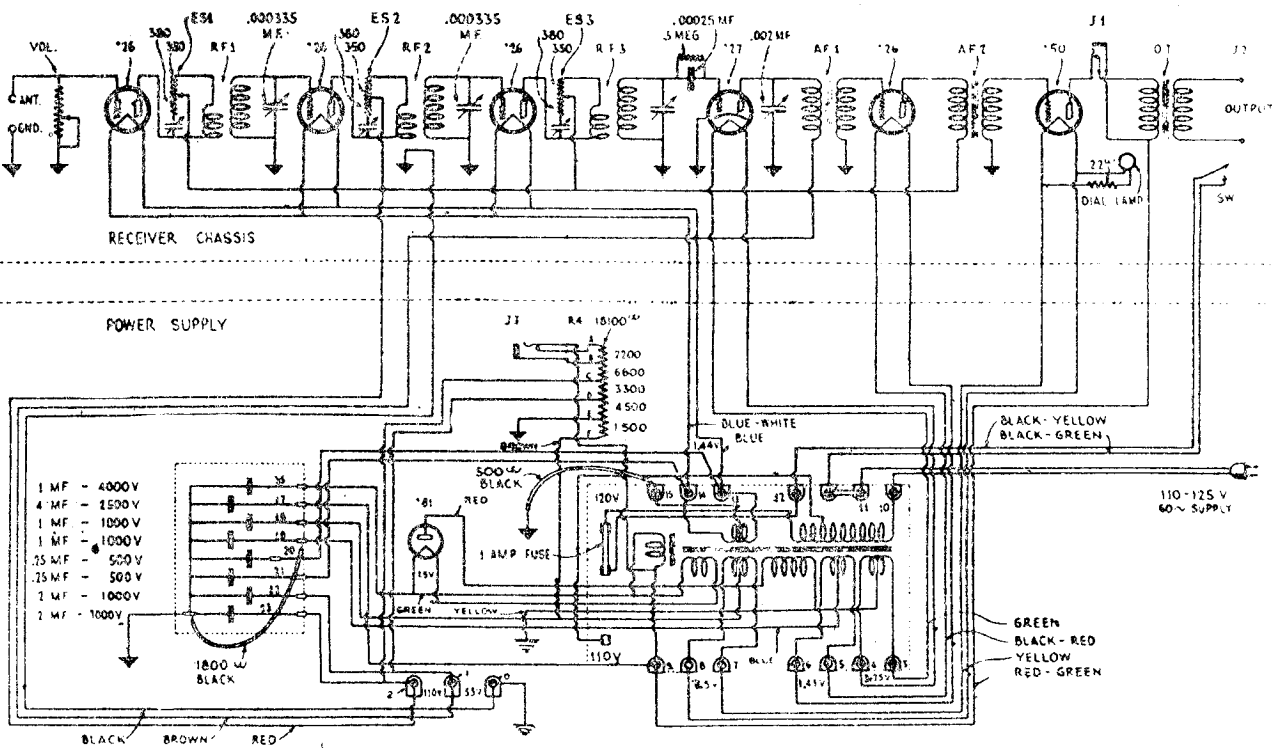
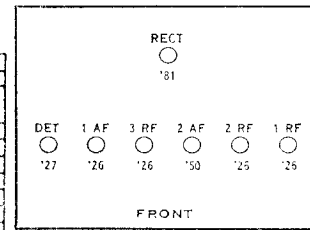
Model L



FRESHMAN—Model "N"
Line Voltage 119—120 Volt Tap

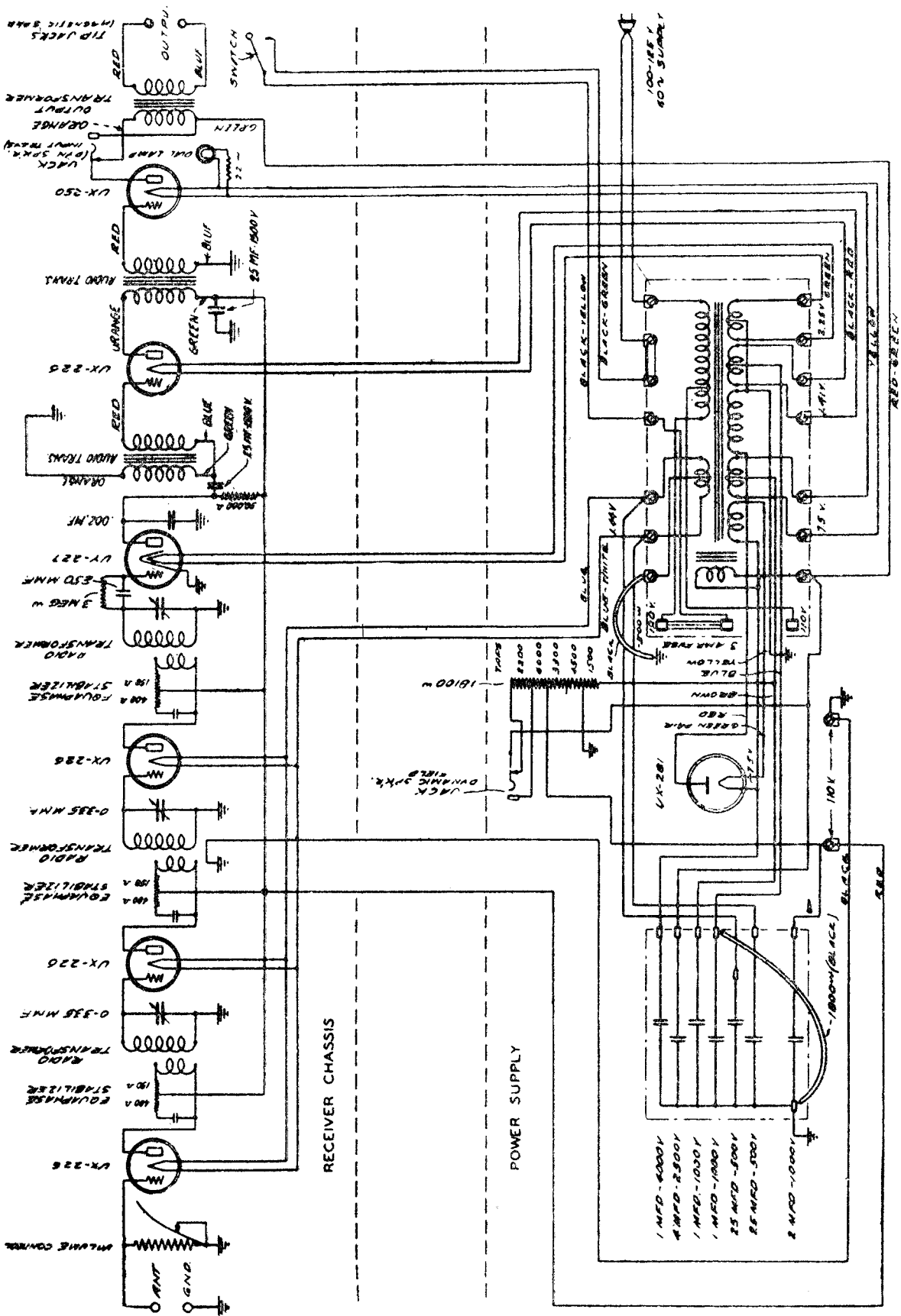
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1BY. AF. DET. ETC.	REAR PANEL PLUG IN SOCKET OF SET							
			TUBE OUT			TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	OUTDOOR VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRM. VERT.	PLATE M.A. CALIBRAZ.	
1	226	1st. R.F.	1.45	100	1.35	90	5	3.2	7.5	4.2
2	224	2nd. R.F.	1.45	100	1.35	90	5	3.2	7.5	4.2
3	224	3rd. R.F.	1.45	100	1.35	90	5	3.2	7.5	4.2
4	227	Detector	2.80	100	2.25	50	0	2.2	2.2	0.0
5	225	1st. A.F.	1.45	100	1.35	90	6	3.2	7.5	5.2
6	250	2nd. A.F.	7.5	350	7.2	300	5	36.0	42.5	7.2
7	261	Rectifier	-	-	7.2	-	-	46.0	-	-

Model N



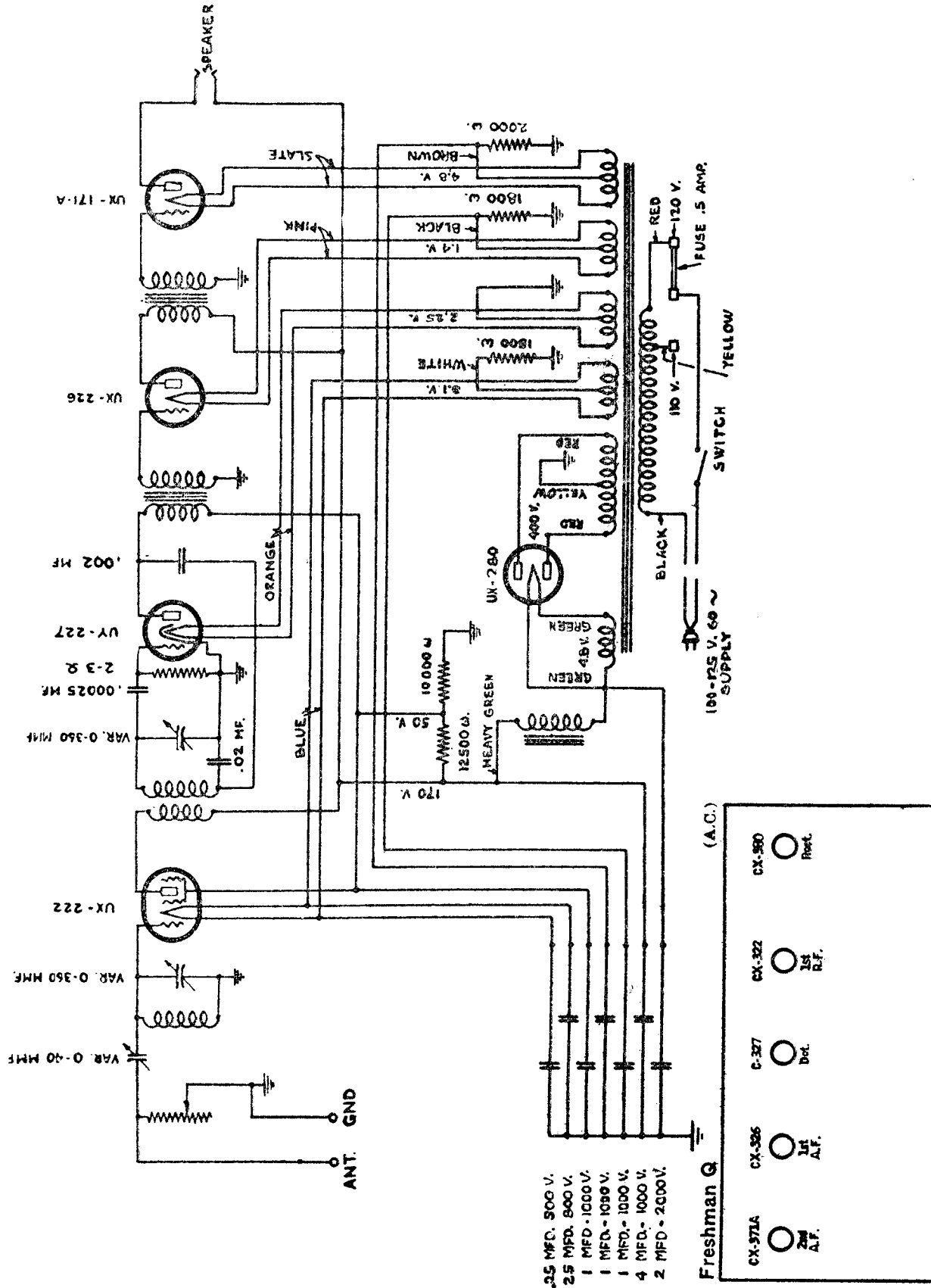
MODEL 2N with
2N-60-S Power Unit

CHARLES FRESHMAN CO., INC.



CHARLES FRESHMAN CO., INC.

MODEL Q-15, Q-16



- .25 MFD. 500 V.
- 25 MFD. 900 V.
- 1 MFD. 1000 V.
- 1 MFD. 1050 V.
- 1 MFD. 1000 V.
- 4 MFD. 1000 V.
- 2 MFD. 2000 V.

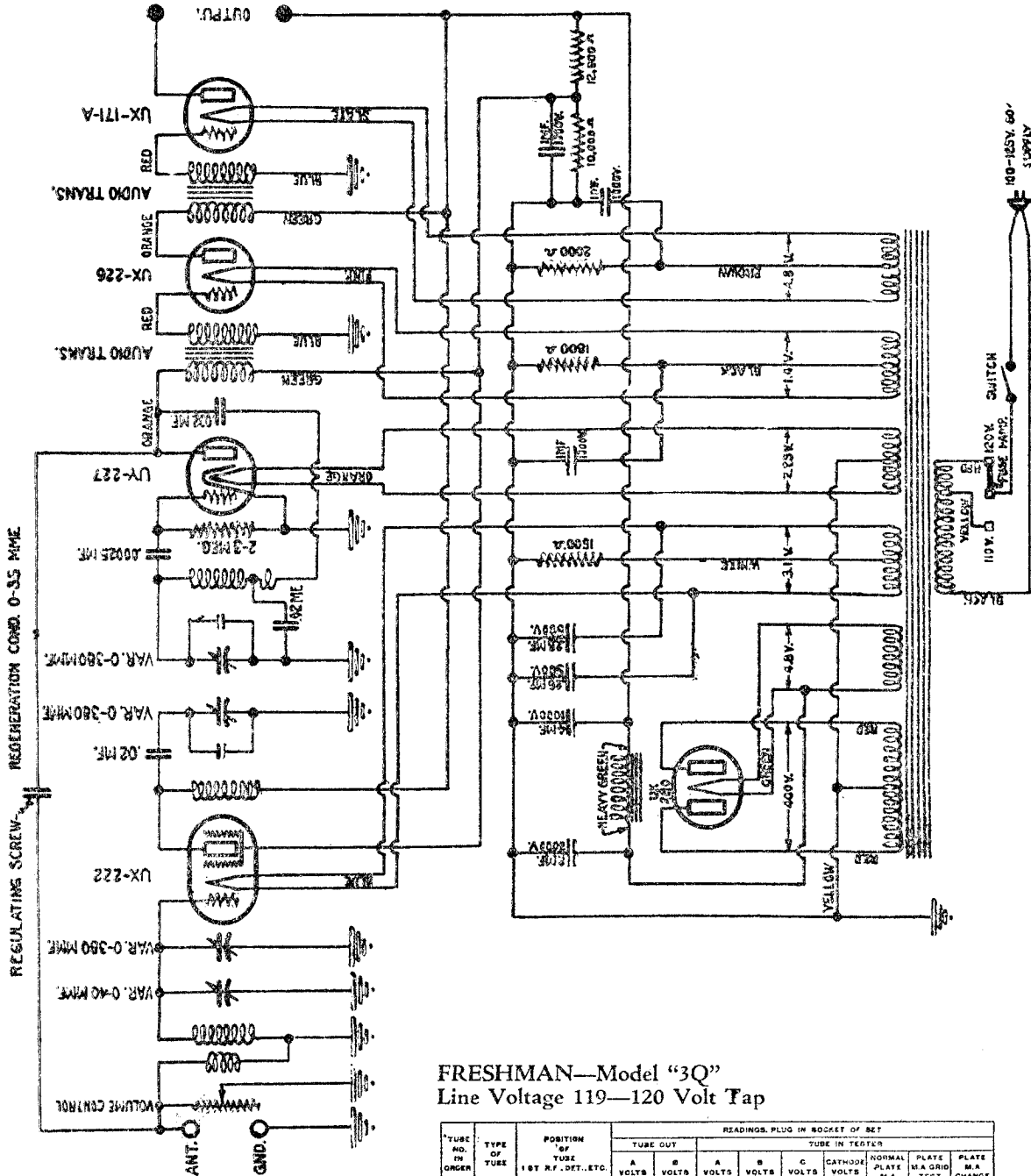
(A.C.)

Freshman Q

CX-571A	2nd A.F.
CX-526	1st A.F.
C-37	Det.
CX-322	1st R.F.
CX-580	Rect.

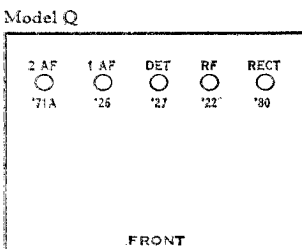
MODEL 3-Q-15
3-Q-16

CHARLES FRESHMAN CO., INC.

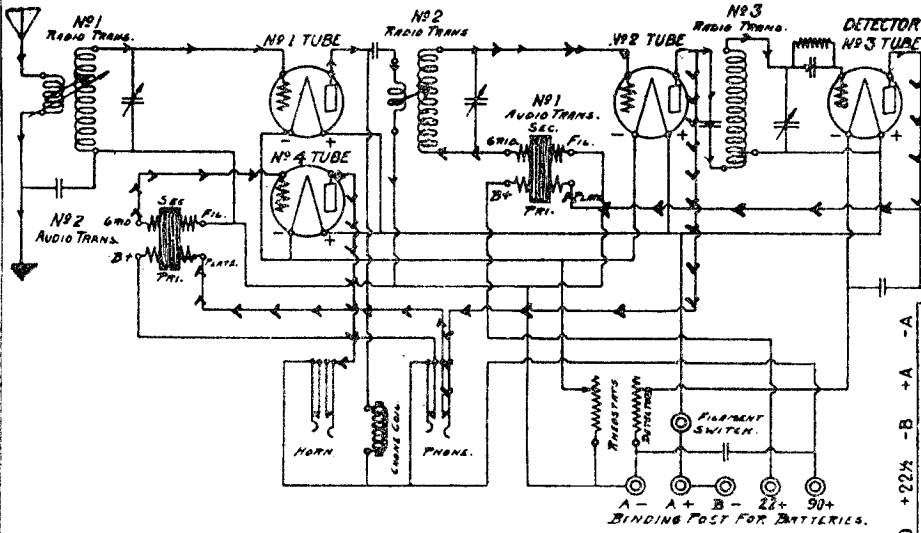


FRESHMAN—Model "3Q"
Line Voltage 119—120 Volt Tap

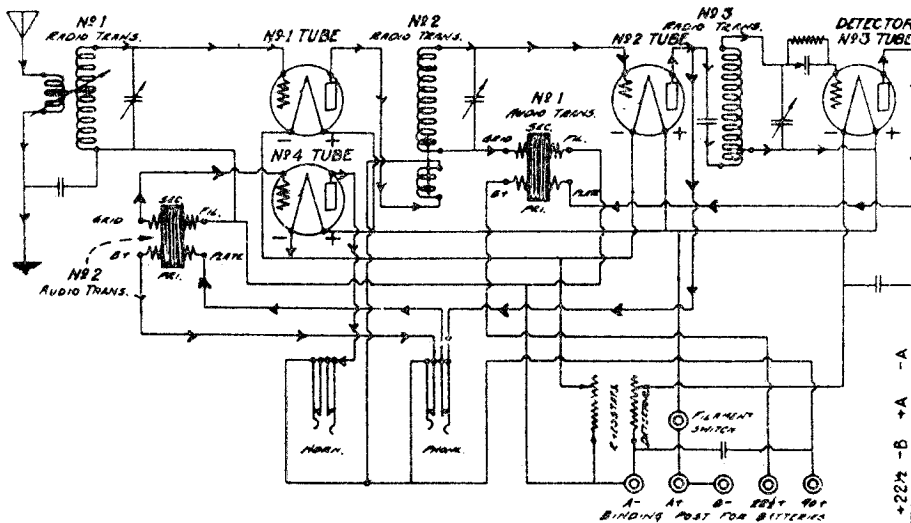
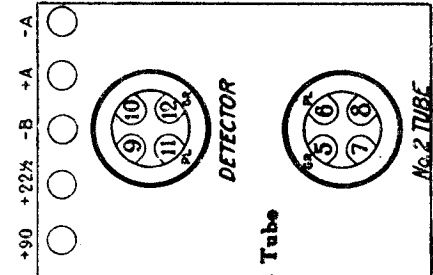
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET						
			TUBE OUT			TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE MA	PLATE MA GRID TEST	PLATE MA CHANGE
1	222	1st. R.F.	3.10	162	3.00	150	3.0		
2	227	Detector	2.35	150	2.10	50	0.0	2.75	2.75
3	226	1st. A.P.	1.45	150	1.35	140	10	4.2	8.6
4	171A	2nd. A.P.	4.90	140	4.60	125	25	16.5	18.0
5	230	Rectifier	"	"	4.60	"	"	22.0	"



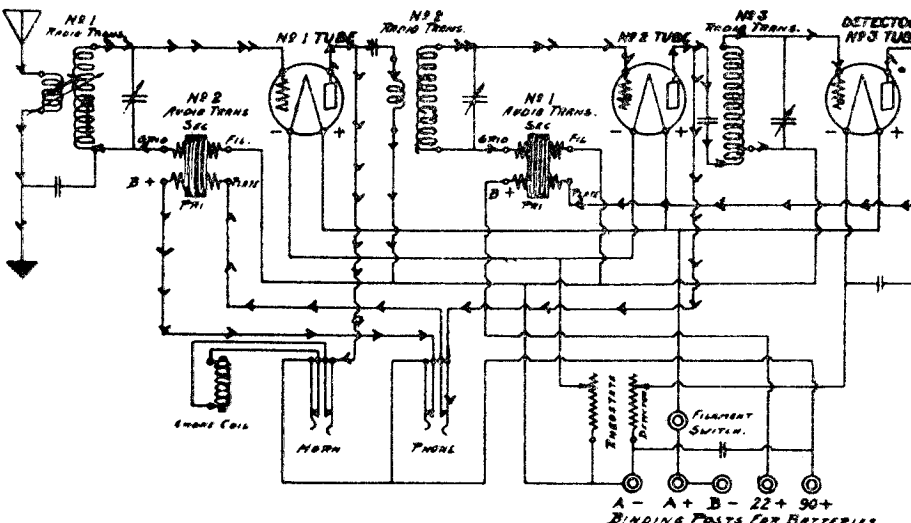
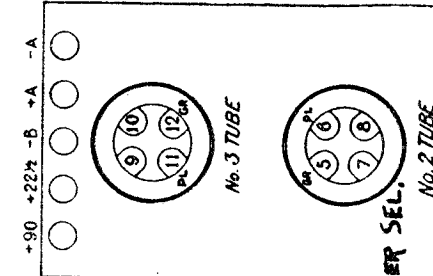
GENERAL MOTORS RADIO CORP. MODEL OEM-7 4 Tube
 MODEL OEM-7 Super-SEL.
 MODEL OEM-11 3 Tube



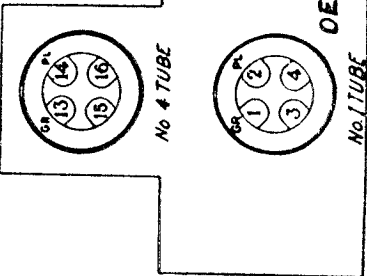
OEM-7 — 4-Tube



OEM-7 — Super-Selective



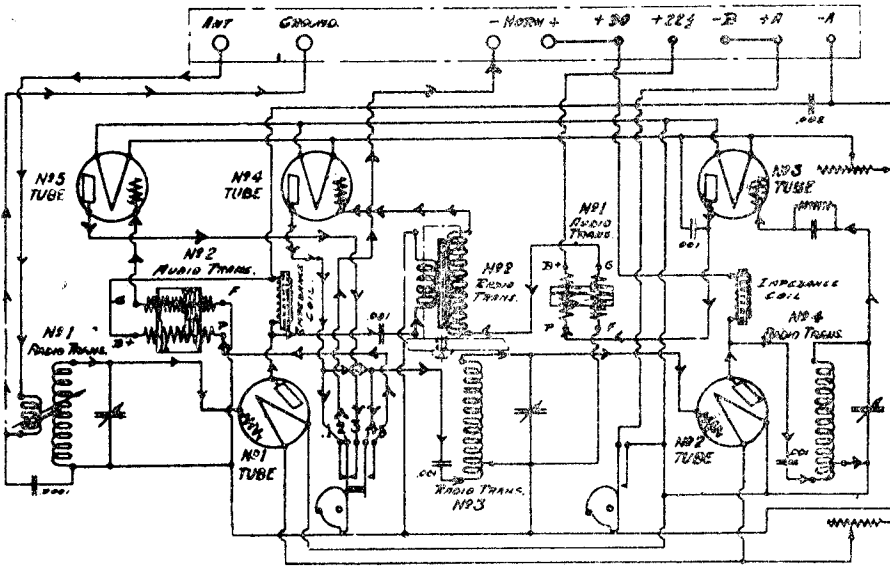
OEM-11 — 3-Tube



OEM-7 AND
 OEM-7 SUPER SEL.

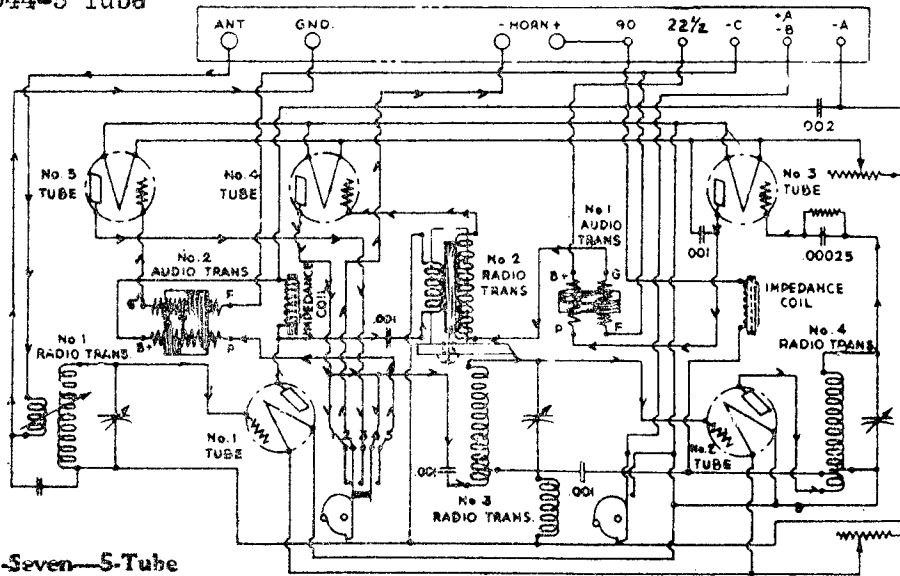
MODEL 5044-5 Tube
MODEL 527-5 Tube

GENERAL MOTORS RADIO CORP.

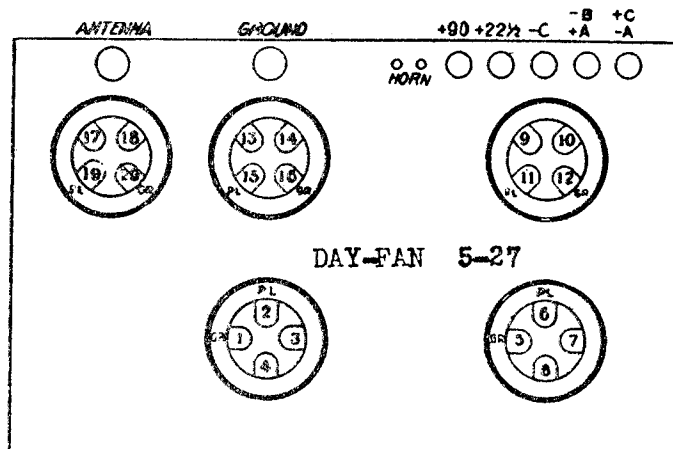
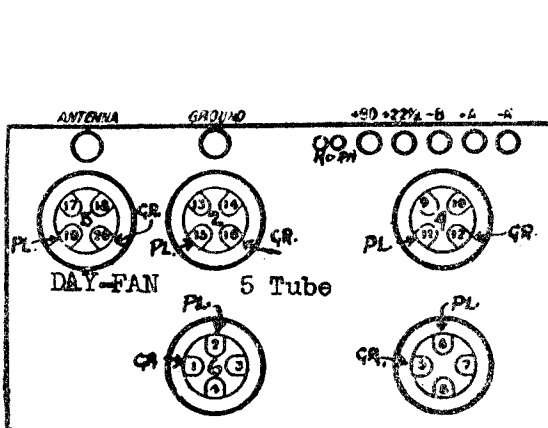


DAY-FAN FIVE

Model 5044-5 Tube

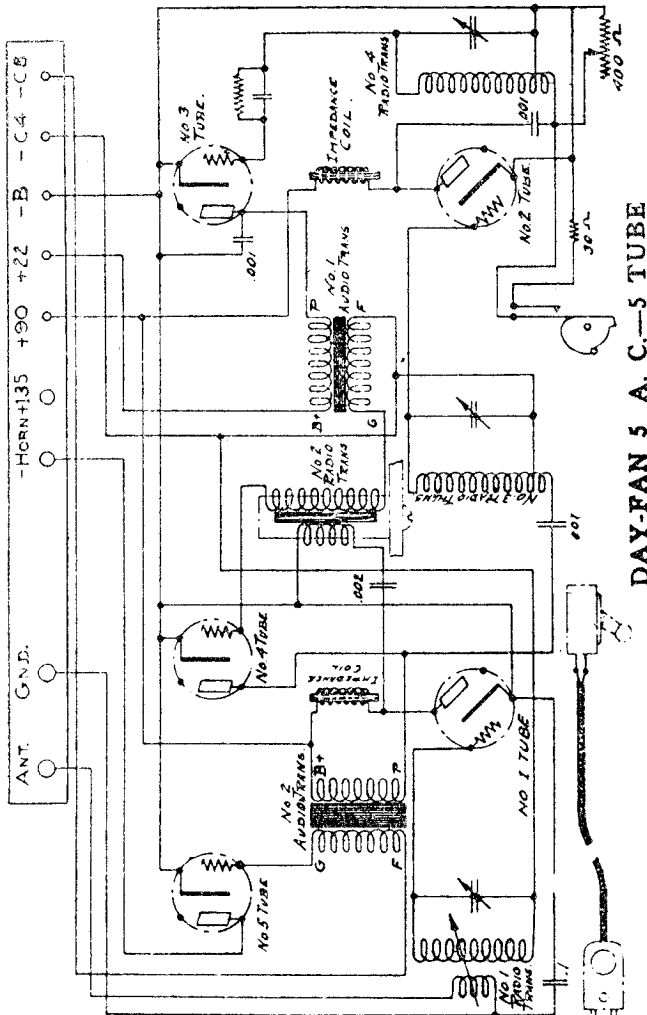


Day-Fan Five Twenty-Seven—5-Tube

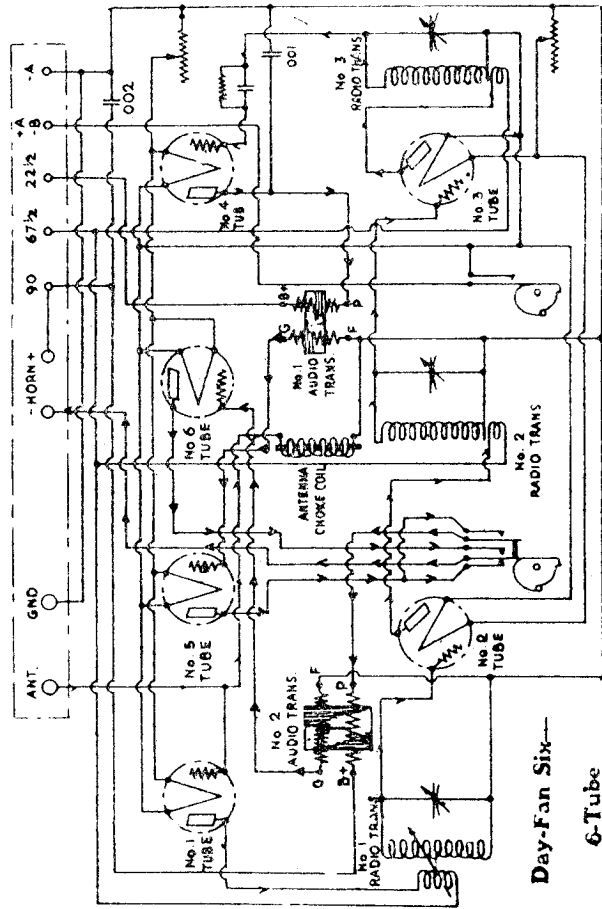


GENERAL MOTORS RADIO CORP.

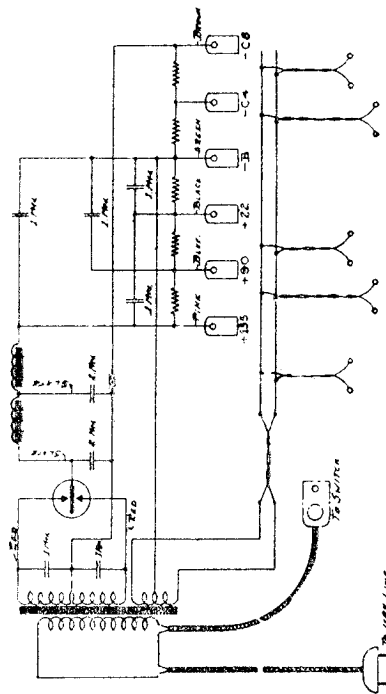
MODEL Day-Fan 5-AC
 MODEL Day-Fan 5
 MODEL Day-Fan 5-AC GPU



DAY-FAN 5 A. C. 5 TUBE



Day-Fan Six—
6-Tube

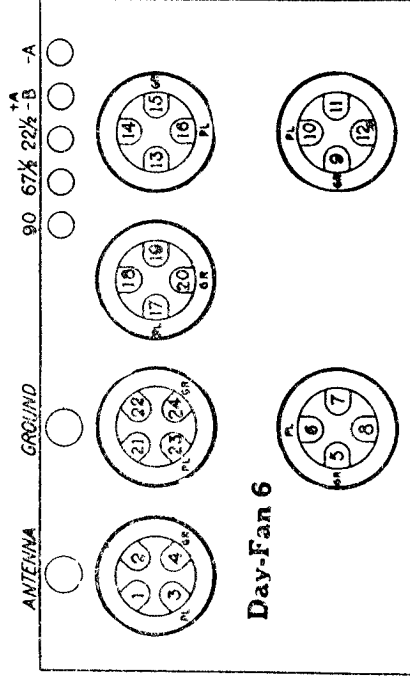


POWER SUPPLY FOR 5 TUBE A. C. SET

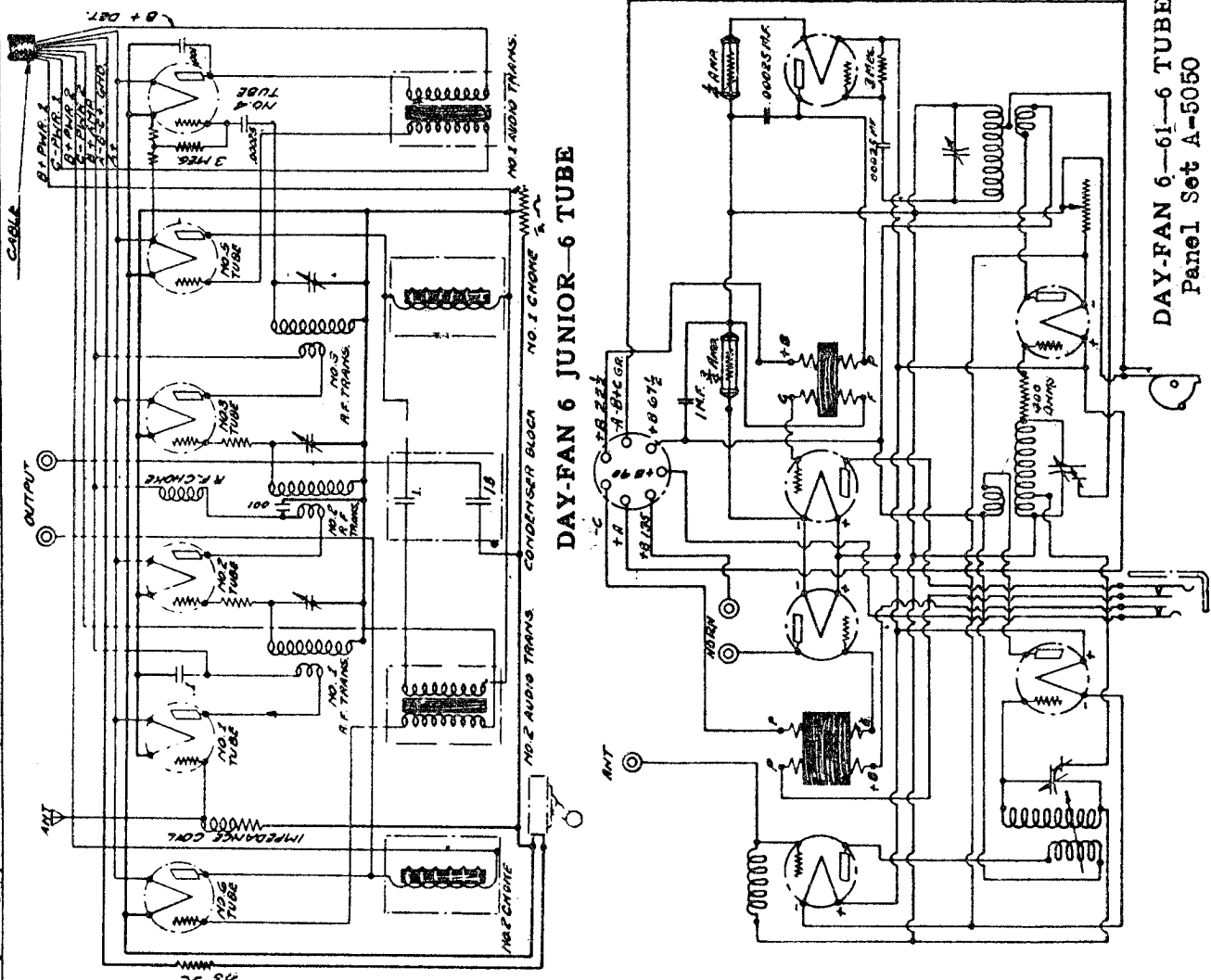
SUB-PANEL OF DAY-FAN 5 TUBE A. C.

CABLE COLOR CODE

Terminal	Wire Color	Power
Horn +	Red	135
No. 1	Maroon	90
No. 2	Red and Black	22
No. 3	Black	B + C
No. 4	Yellow and Black	- B + C
No. 5	Yellow Solid	C 8



MODEL Day-Fan 6 Jr. GENERAL MOTORS RADIO CORP.
 MODEL Day-Fan 6-61
 (5050)

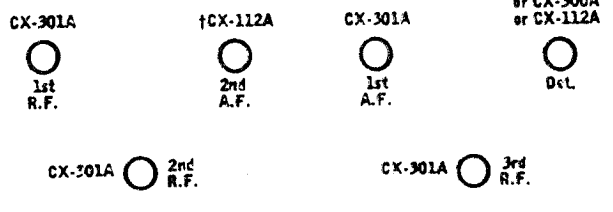
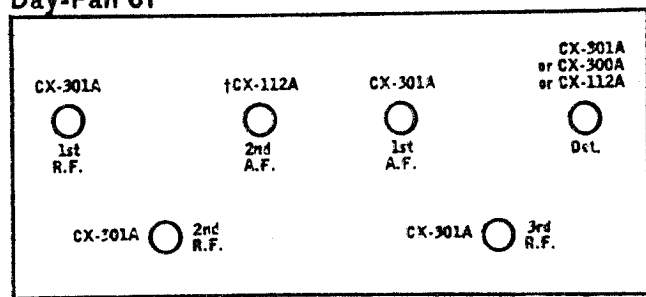
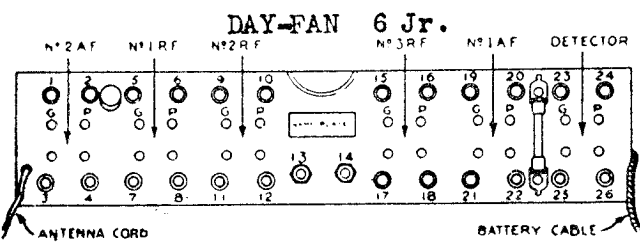


STANDARD, BATTERY CABLE CONNECTIONS

Color of Wire	(DAY-FAN 6 Jr.)	N. E. M. A. Rating
Red	B + Pwr. 2.
Red and White	B + Pwr. 1.
Red and Maroon	B + Amp.
Maroon	B + Det.
Yellow	A +
Green with Red and Yellow tracers	B -, A -, C +.
Black and Green	C - Pwr. 1.
Black and White	C - Pwr. 2.

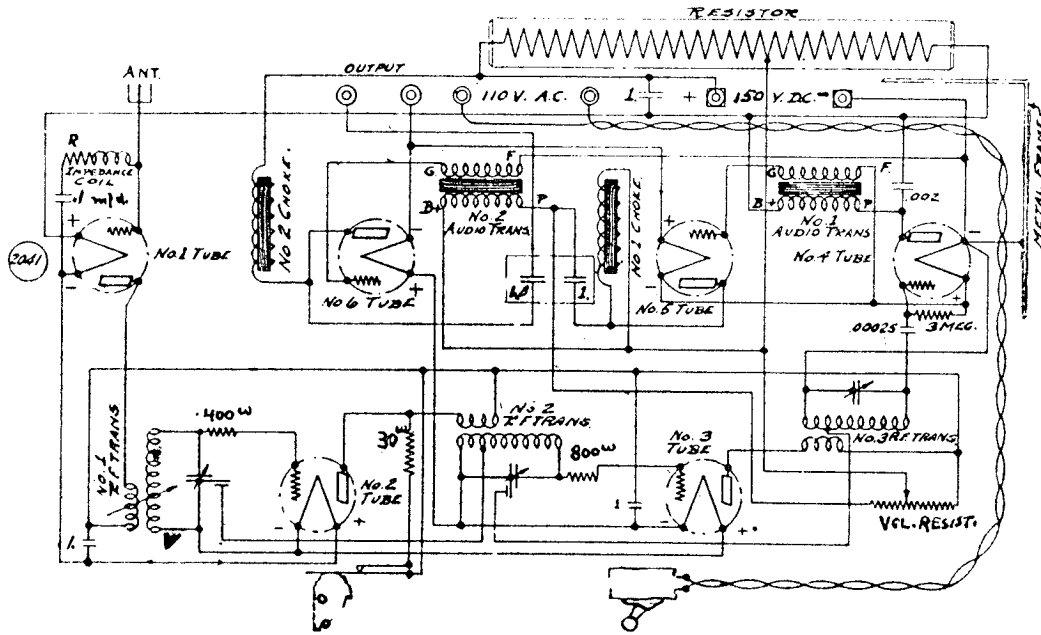
Day-Fan 61

(Batt.)

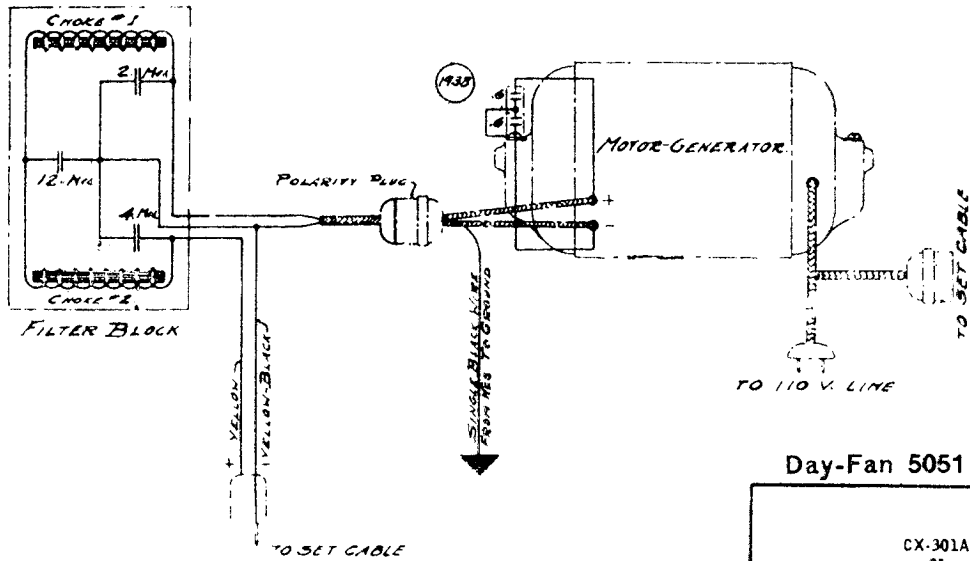


GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5051
(MG Set)
Motor-Generator

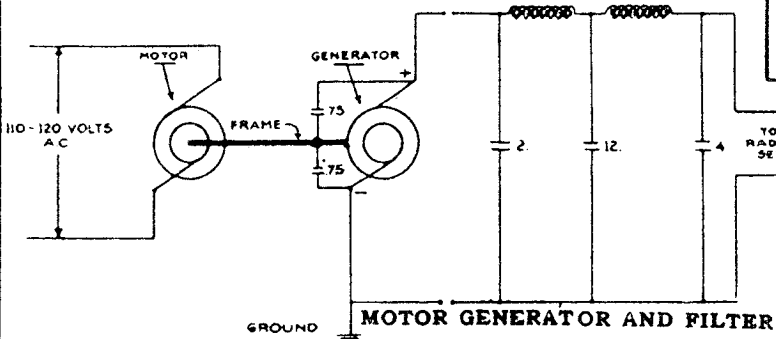
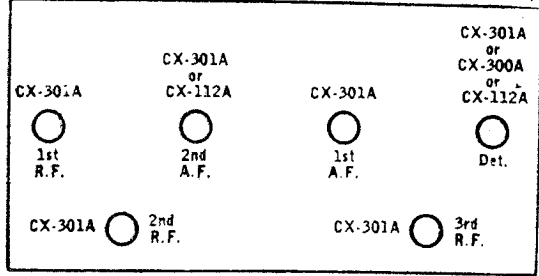


MOTOR GENERATOR SET—6 TUBE



MOTOR GENERATOR AND FILTER

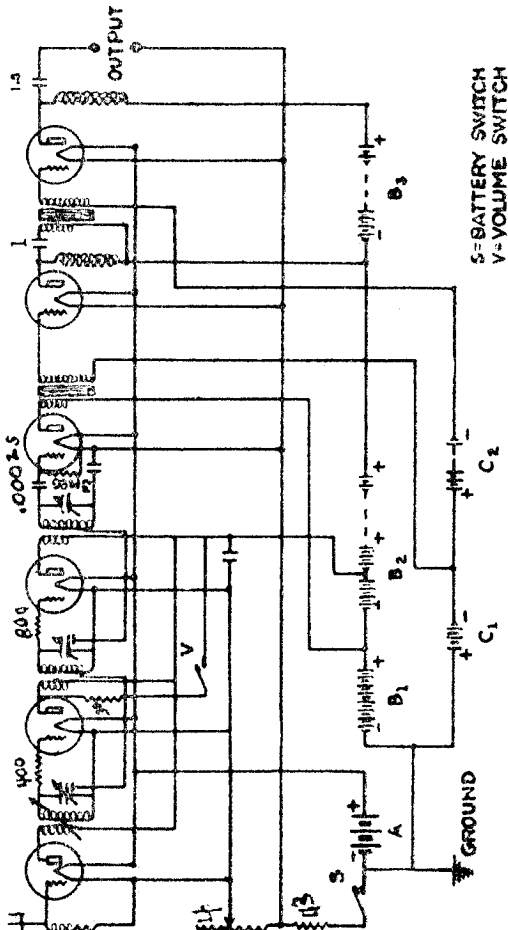
Day-Fan 5051 (Motor Generator Set)



MOTOR GENERATOR AND FILTER

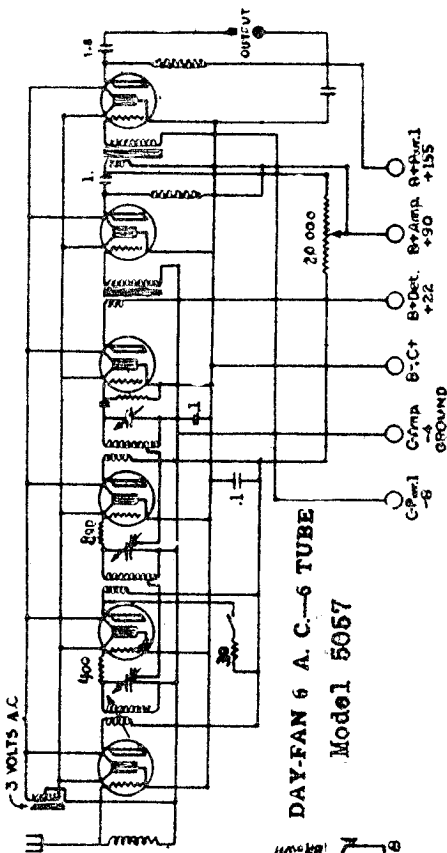
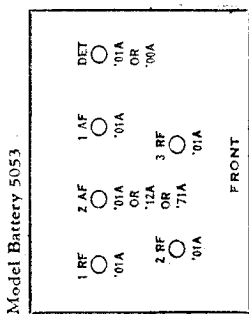
MODEL Day-Fan 5053.
 MODEL Day-Fan 5057
 MODEL Day-Fan 5057SPU

GENERAL MOTORS RADIO CORP.

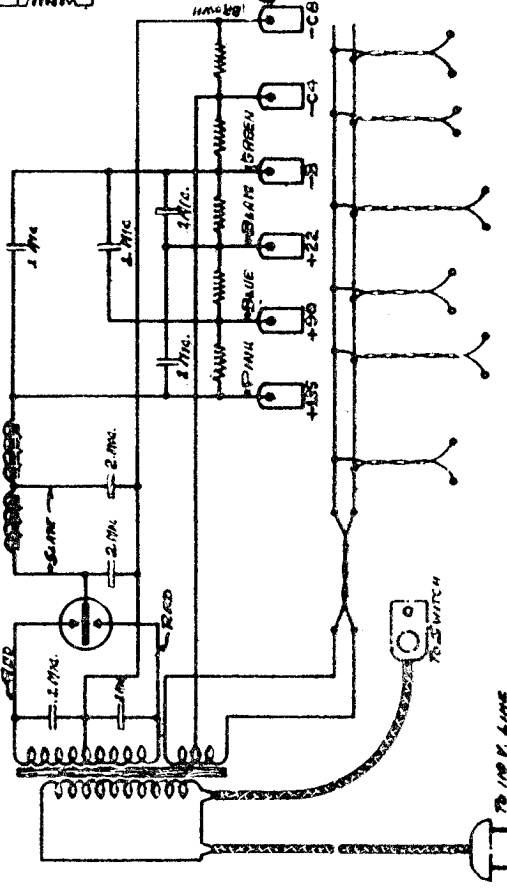


S = BATTERY SWITCH
 V = VOLUME SWITCH

DAY-FAN 6 B-6 TUBE Model 5053



DAY-FAN 6 A. C.-6 TUBE Model 5057



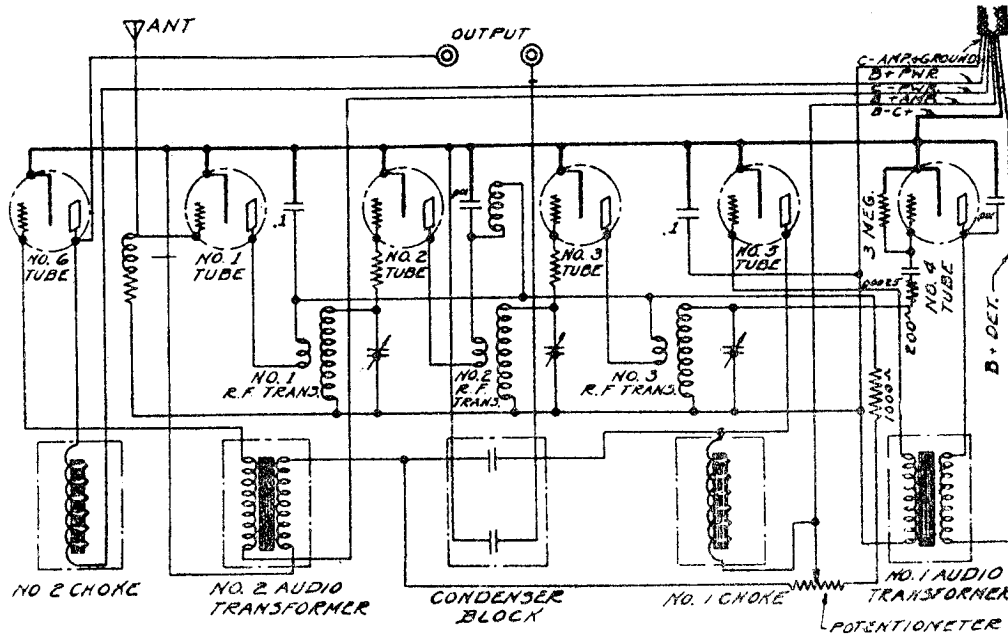
POWER SUPPLY FOR 6 TUBE A. C. SET Model 5057

POWER CABLE COLOR CODE

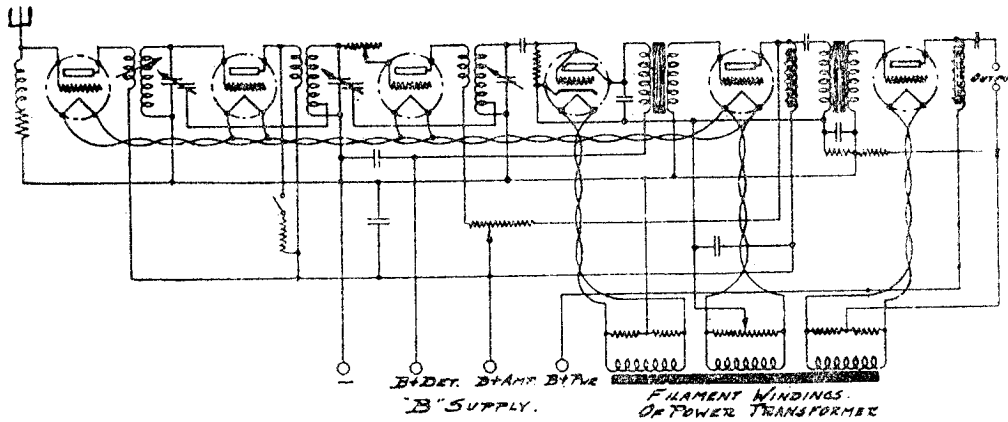
Color of Wire	N. E. M. A. Rating
Red and White	B + Pwr. 1.
Red and Maroon	B + Amp.
Maroon	B + Det.
Green with Red and Yellow	B - C +
Black and Green	C - Amp. and Ground
Black and White	C - Pwr. 1.

GENERAL MOTORS RADIO CORP.

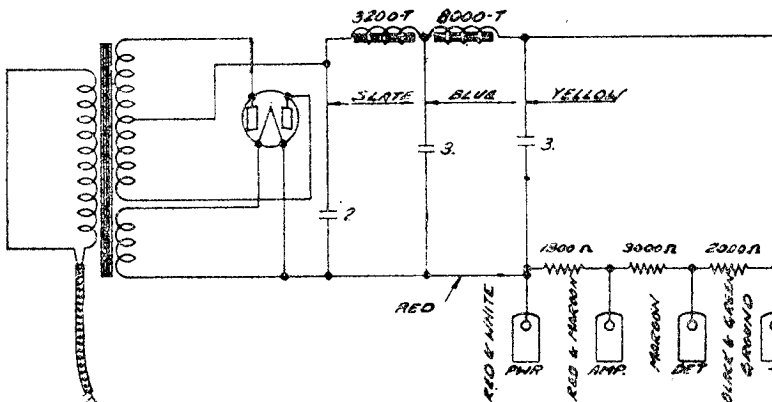
MODEL Day-Fan 5066
 MODEL Day-Fan 5065
 MODEL 5524, 5525,
 SPU For 5065



DAY-FAN 6 JUNIOR A C. POWER SET
 Model 5066



DAY-FAN 6 A. C. (R. C. A. TUBE) POWER SET - Model 5065



Radio "B" Power Supply - Model Nos. 5524 and 5525.
 (For 6 tube (R.C.A.) A.C. Set.)

N. E. M. A. Rating

B + Power	---
B + Amp.	---
B + Det.	---
B + C +	---
B - Amp., and Gr.	---
C - Power	---

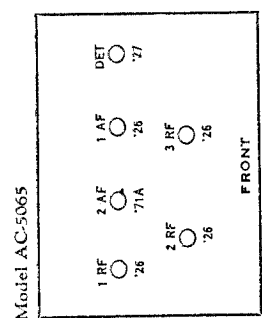
POWER CABLE COLOR CODE:
 Model 5066

Color of Wire

Red and White	---
Red and Maroon	---
Maroon	---
Green with Red and Yellow Tracers	---
Black and Green	---
Black and White	---

POWER CABLE COLOR CODE:
 Model 5065

N. E. M. A. Rating	---
B + Power	---
B + Amp.	---
B + Det.	---
B - and Ground	---

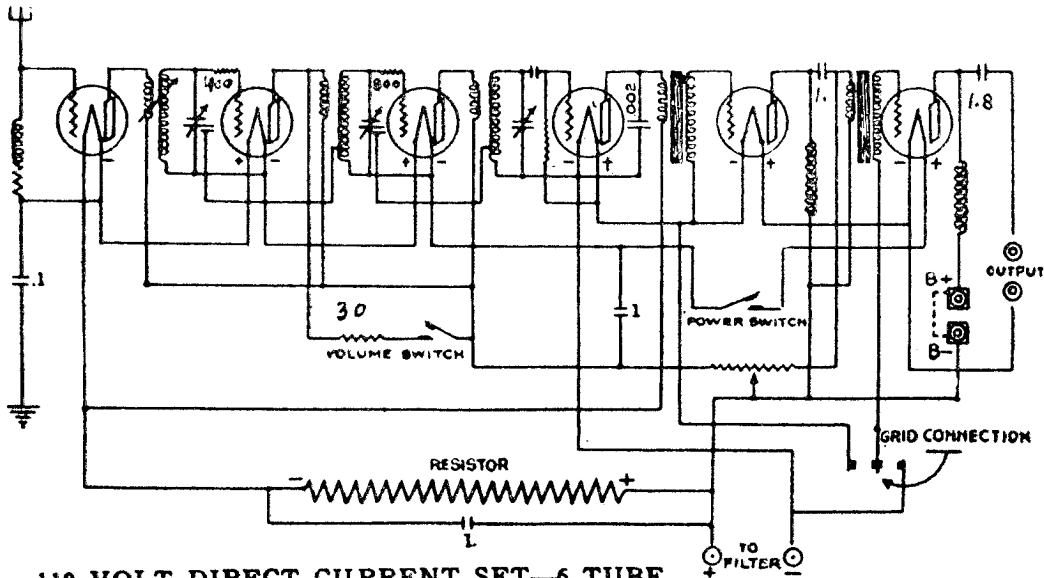


Color of Wire

Red and White	---
Red and Maroon	---
Maroon	---
Black with Green tracer	---

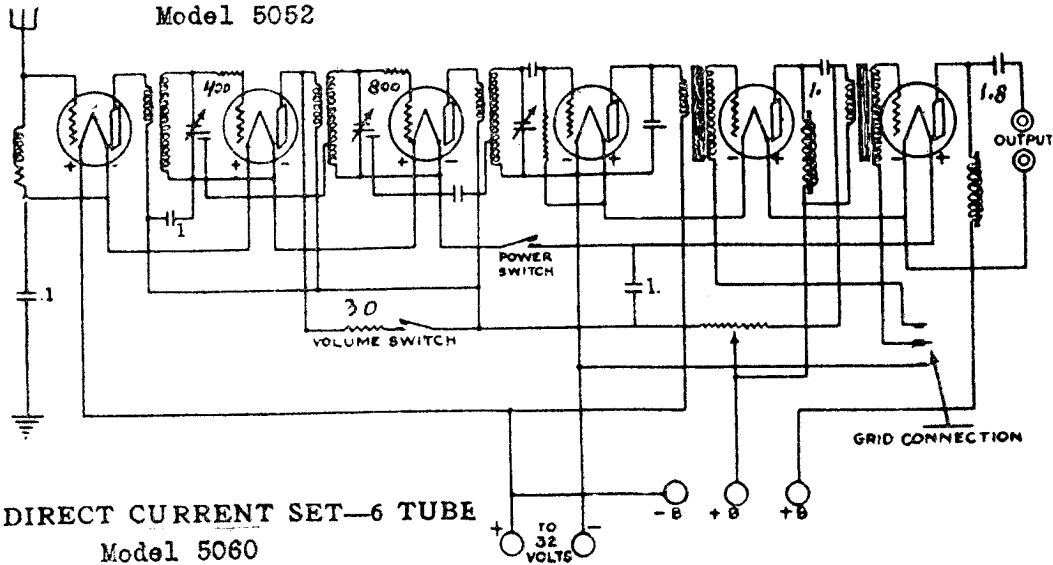
MODEL Day-Fan 5052
 MODEL Day-Fan 5060

GENERAL MOTORS RADIO CORP.



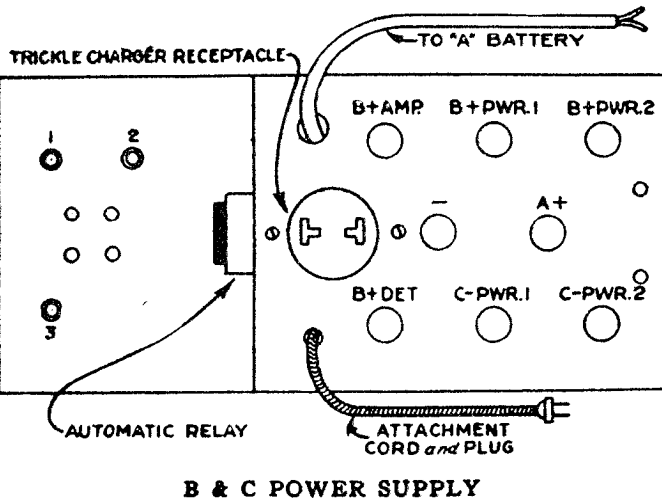
110 VOLT DIRECT CURRENT SET—6 TUBE

Model 5052

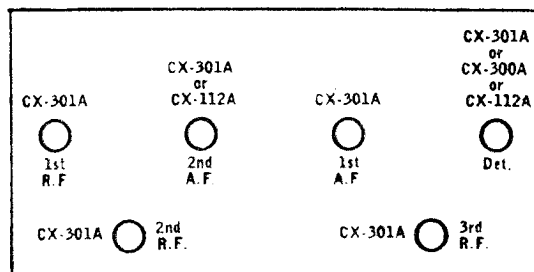


32 VOLT DIRECT CURRENT SET—6 TUBE

Model 5060

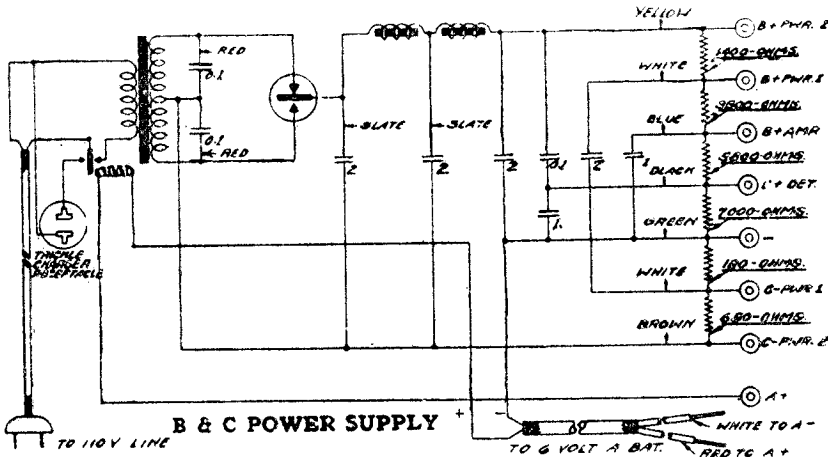


Day-Fan 5060 (D.C. 32V. Set)
 " " 5052 (D.C. 110V. Set)



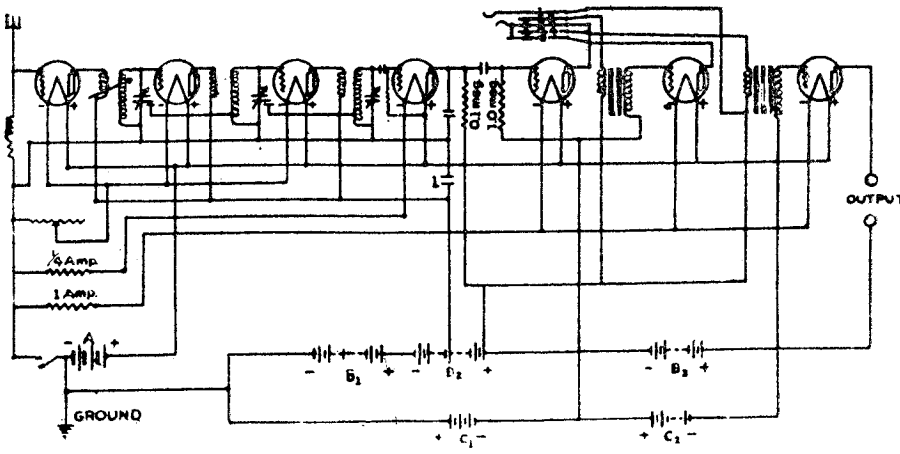
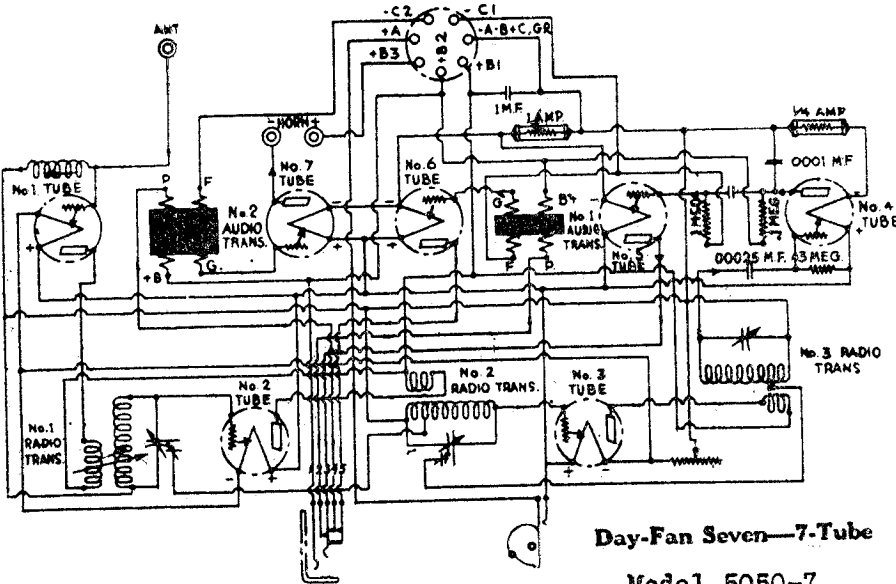
GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5050-7
MODEL "B & C" SPU



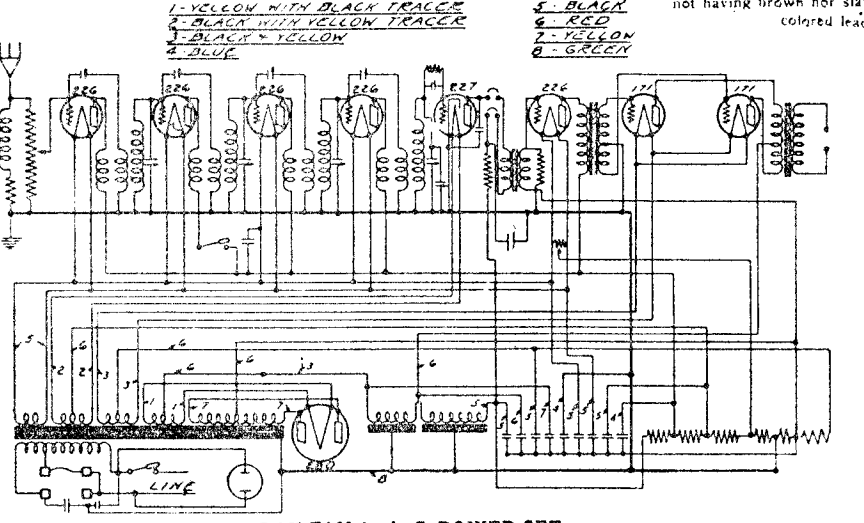
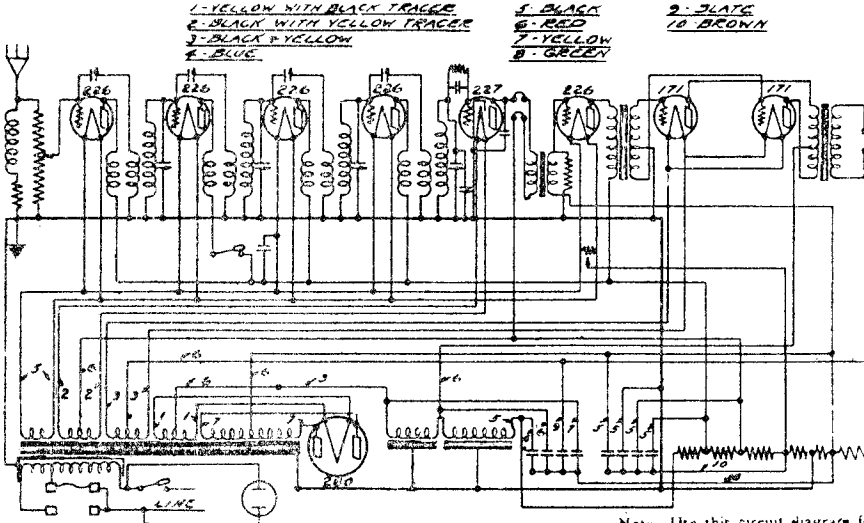
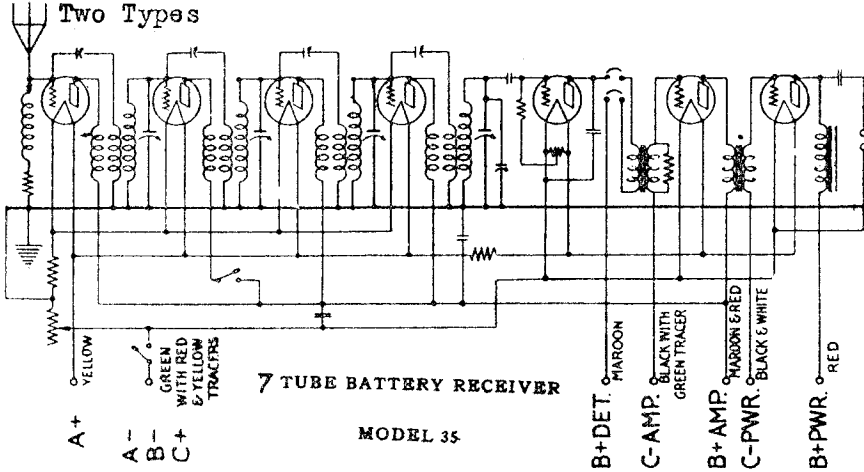
STANDARD BATTERY CONNECTIONS TO DAY-FAN 7 (5050)

Color of Cable Wire	Voltage
Pink	B + Power
Blue	B + 90
Yellow	B + 67½
Red	A + 6
Green	B, A, C +
Black	C - 4
Brown	C - Power

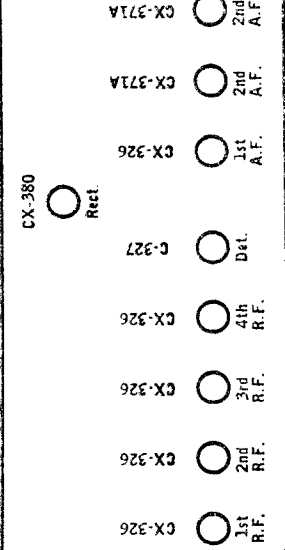
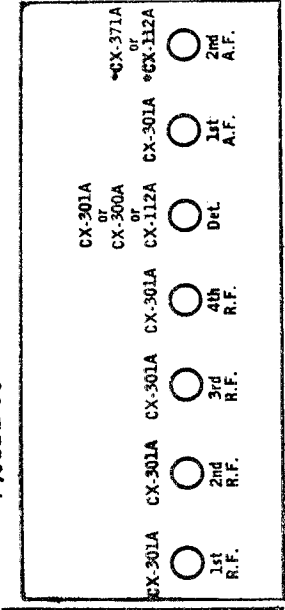


Day-Fan 5050		(Batt.)	
CX-301A	1st R.F.	CX-301A or CX-300A or CX-340	Det.
CX-301A	2nd A.F.	CX-301A	Det.
CX-301A	3rd A.F.	CX-301A	1st A.F.
CX-301A	2nd R.F.	CX-301A	3rd R.F.

MODEL Day-Fan 35 GENERAL MOTORS RADIO CORP.
 MODEL Day-Fan 25, 26,
 27, 28, 43, 48



DAY-FAN—Models 25-26
Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

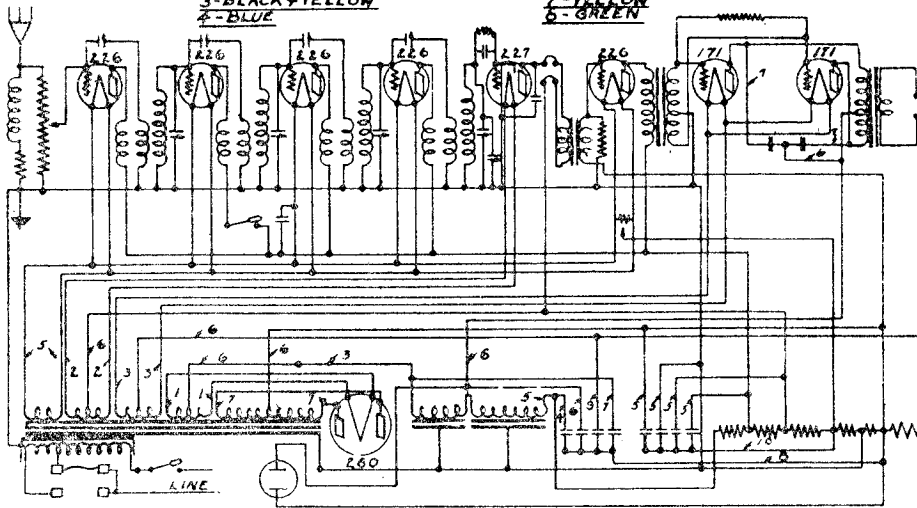


TUBE IN SOCKET	TUBE IN TESTER						NOMINAL PLATE VOLTAGE	NOMINAL PLATE CURRENT (MA)	PLATE WARM-UP TIME (MIN)	TUBE IN SOCKET
	1ST A.F.	2ND A.F.	1ST D.T.	2ND D.T.	1ST R.F.	2ND R.F.				
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
226	1.5	1.5	1.5	1.5	1.5	110	5.5	6.5	18.0	1.0
171A	2.0	2.0	2.0	2.0	2.0	158	3.0	18.0	21.0	3.0
171A	2.0	2.0	2.0	2.0	2.0	158	3.0	18.0	21.0	3.0
171A	2.0	2.0	2.0	2.0	2.0	158	3.0	18.0	21.0	3.0

GENERAL MOTORS RADIO CORP.

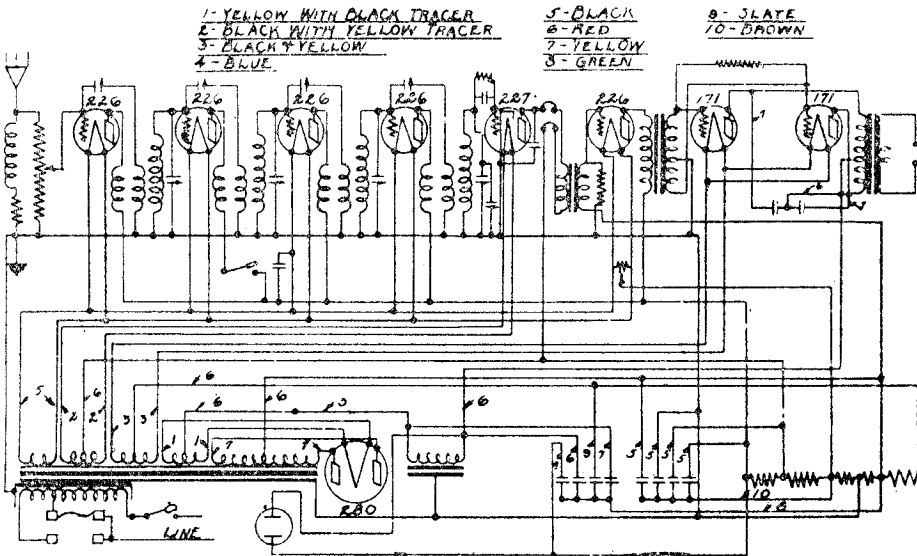
MODEL Day-Fan 5077
MODEL Day-Fan 5080

- 1-YELLOW WITH BLACK TRACER
- 2-BLACK WITH YELLOW TRACER
- 3-BLACK-YELLOW
- 4-BLUE
- 5-BLACK
- 6-RED
- 7-YELLOW
- 8-GREEN
- 9-SLATE
- 10-BROWN



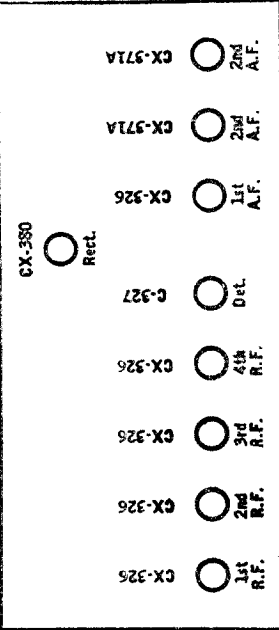
DAY-FAN 8-TUBE — MODEL 5077
(For Use with 200-Volt D. C. Dynamic Speaker)

(A.C.)



DAY-FAN 8-TUBE — MODEL 5080
(For Use with 110-Volt D. C. Dynamic Speaker)

Day-Fan 5069, 5080,



Tube Fil. Vol. Plate Vol. Grid Vol. Plate Current

RF1	1.3	150	9	4.5
RF2	1.3	150	9	4.5
RF3	1.3	150	9	4.5
RF4	1.3	150	9	4.5
Det	2.2	30	**	1.7
AF1	1.3	130	5	4.5
PP1	2.25	235	7	see note
PP2	2.25	235	7	see note

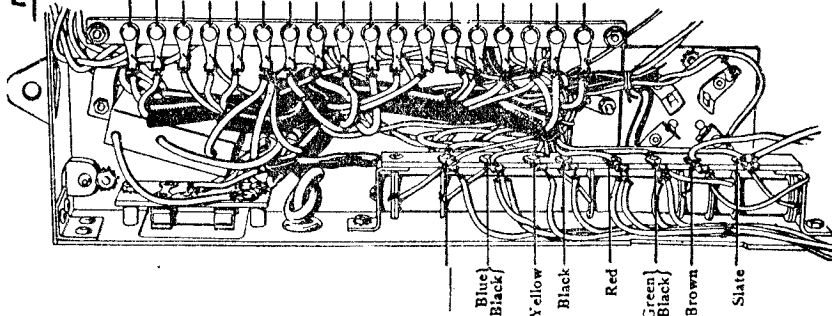
Low output tube bias due to resistance in grid circuit.

MODEL 5080

Power Block Connections

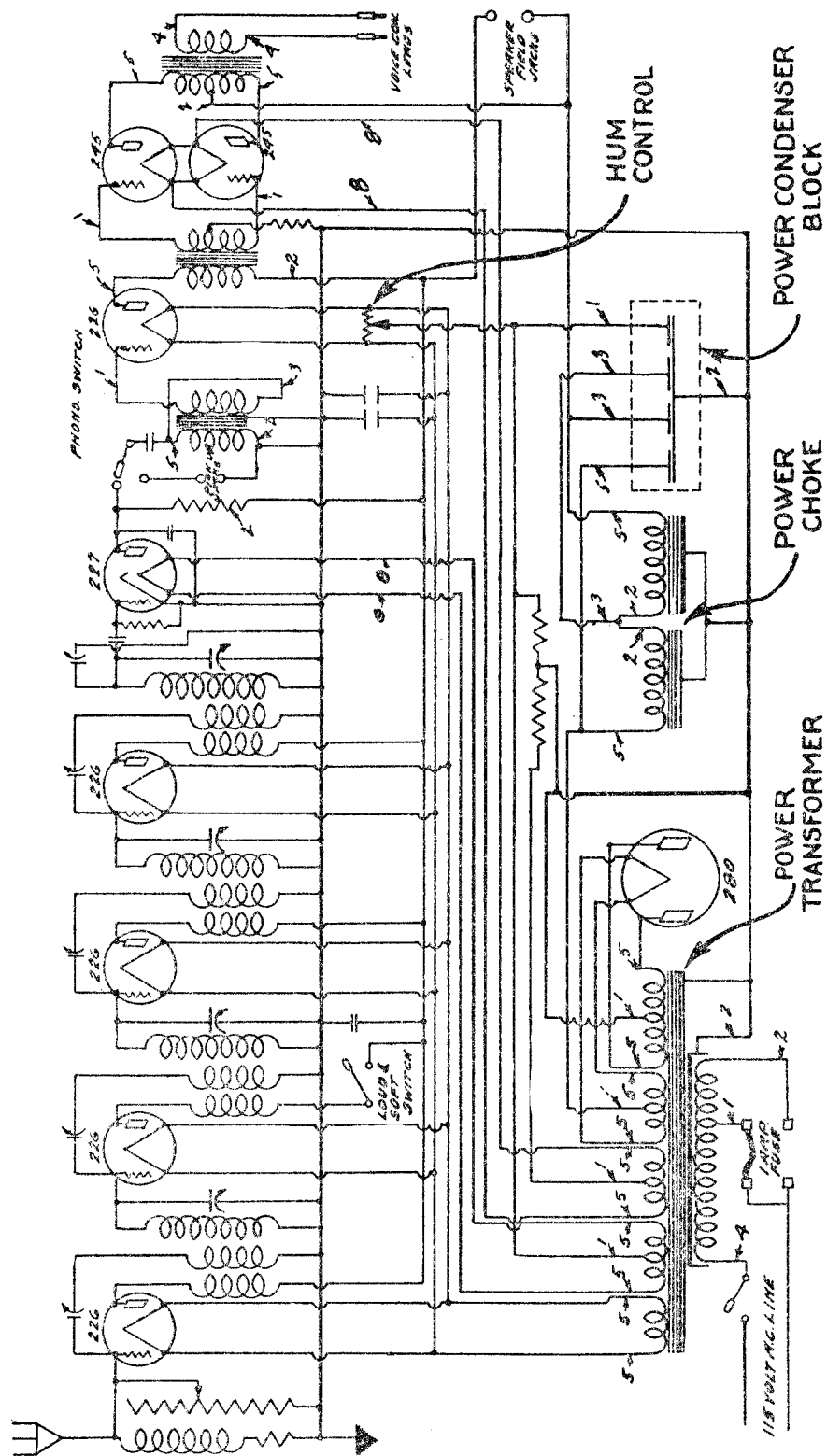
- Black
- Black
- Black-Yellow Tracer
- Red
- Black-Yellow Tracer
- Black*
- Yellow-Braided Black Tracer
- Red
- Yellow-Braided Black Tracer
- Yellow-Black Tracer
- Red
- Yellow-Black Tracer
- Yellow
- Red
- Yellow-Black Tracer
- Red**
- Green (To Receptacle)

Note — Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.



GENERAL MOTORS RADIO CORP.

MODEL Day-Fan A-5003
A-5010

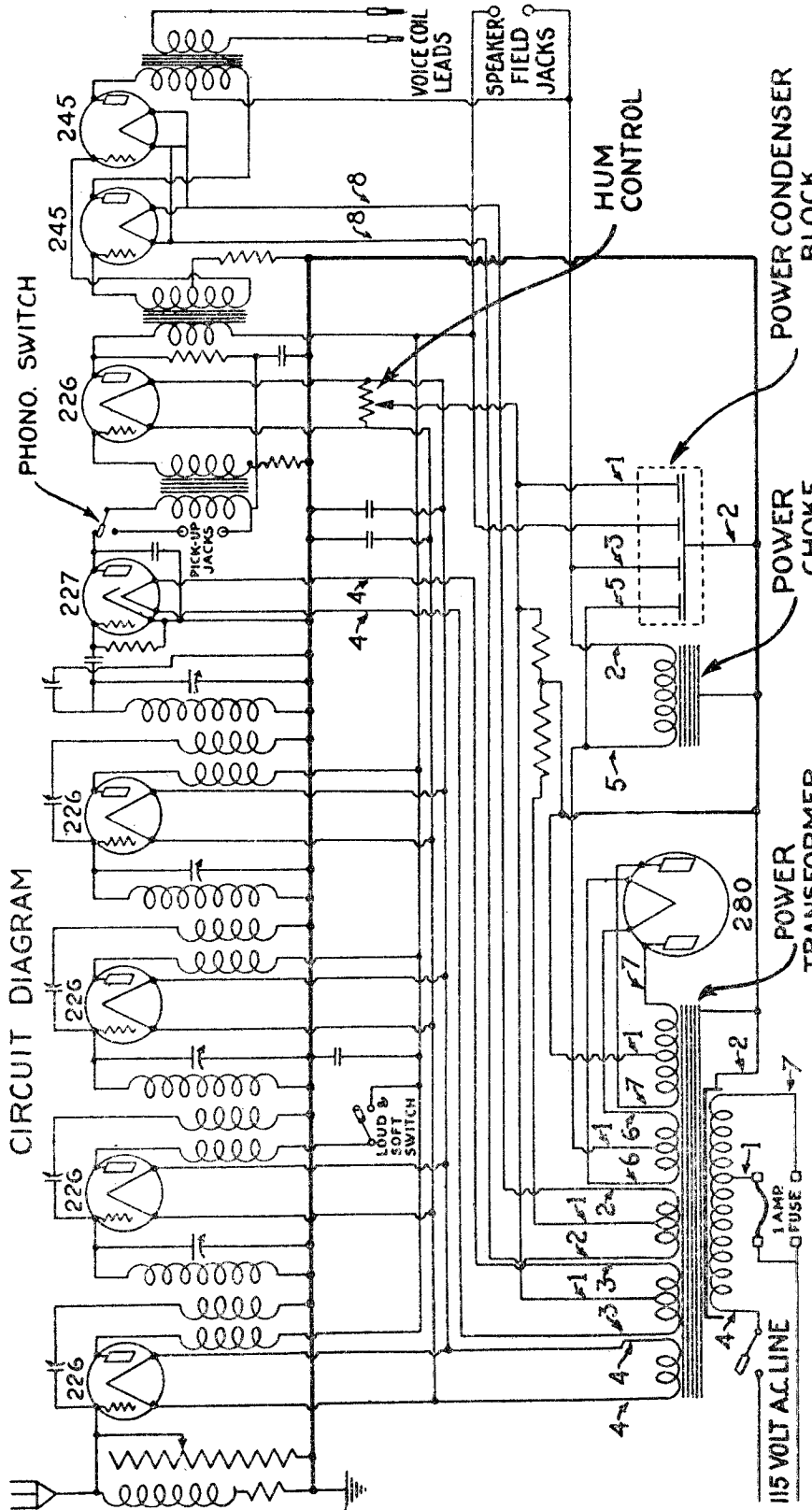


- 1-RED
- 2-GREEN
- 3-BLUE
- 4-YELLOW
- 5-BROWN
- 6-WHITE

Model A-5003, A-5010

CX-326	1st A.F.	CX-345	2nd A.F.
CX-326	CX-326	CX-326	CX-345
0-327	Del.	1st R.F.	2nd R.F.
0-327	4th R.F.	2nd R.F.	1st R.F.
			Rect.
			CX-380

GENERAL MOTORS RADIO CORP. MODEL Day-Fan 5091



CIRCUIT DIAGRAM

DAY-FAN—Model 5091
 Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage Reading on Audio tubes in low due to the current draw of the set tester and high resistances in the set.

- 1—RED
- 2—GREEN
- 3—BLUE
- 4—BLACK
- 5—YELLOW
- 6—BROWN
- 7—WHITE

TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION	TUBE OUT										TUBE IN TESTER				
			1	2	3	4	5	6	7	8	9	10	VOLTS	RESISTANCE			
1	226	1st AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2	226	2nd AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3	226	3rd AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
4	226	4th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5	226	5th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
6	226	6th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
7	226	7th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
8	226	8th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
9	226	9th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
10	226	10th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
11	226	11th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
12	226	12th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
13	226	13th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
14	226	14th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
15	226	15th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
16	226	16th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
17	226	17th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
18	226	18th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
19	226	19th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	226	20th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
21	226	21st AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
22	226	22nd AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
23	226	23rd AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
24	226	24th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
25	226	25th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
26	226	26th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
27	226	27th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
28	226	28th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
29	226	29th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
30	226	30th AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

(A.C.)

CX-326 1st A.F. CX-345 2nd A.F.

CX-326 2nd R.F. CX-326 1st R.F.

CX-326 3rd R.F. CX-326 2nd R.F.

CX-326 4th R.F. CX-326 3rd R.F.

CX-326 5th R.F. CX-326 4th R.F.

CX-326 6th R.F. CX-326 5th R.F.

CX-326 7th R.F. CX-326 6th R.F.

CX-326 8th R.F. CX-326 7th R.F.

CX-326 9th R.F. CX-326 8th R.F.

CX-326 10th R.F. CX-326 9th R.F.

CX-326 11th R.F. CX-326 10th R.F.

CX-326 12th R.F. CX-326 11th R.F.

CX-326 13th R.F. CX-326 12th R.F.

CX-326 14th R.F. CX-326 13th R.F.

CX-326 15th R.F. CX-326 14th R.F.

CX-326 16th R.F. CX-326 15th R.F.

CX-326 17th R.F. CX-326 16th R.F.

CX-326 18th R.F. CX-326 17th R.F.

CX-326 19th R.F. CX-326 18th R.F.

CX-326 20th R.F. CX-326 19th R.F.

CX-326 21st R.F. CX-326 20th R.F.

CX-326 22nd R.F. CX-326 21st R.F.

CX-326 23rd R.F. CX-326 22nd R.F.

CX-326 24th R.F. CX-326 23rd R.F.

CX-326 25th R.F. CX-326 24th R.F.

CX-326 26th R.F. CX-326 25th R.F.

CX-326 27th R.F. CX-326 26th R.F.

CX-326 28th R.F. CX-326 27th R.F.

CX-326 29th R.F. CX-326 28th R.F.

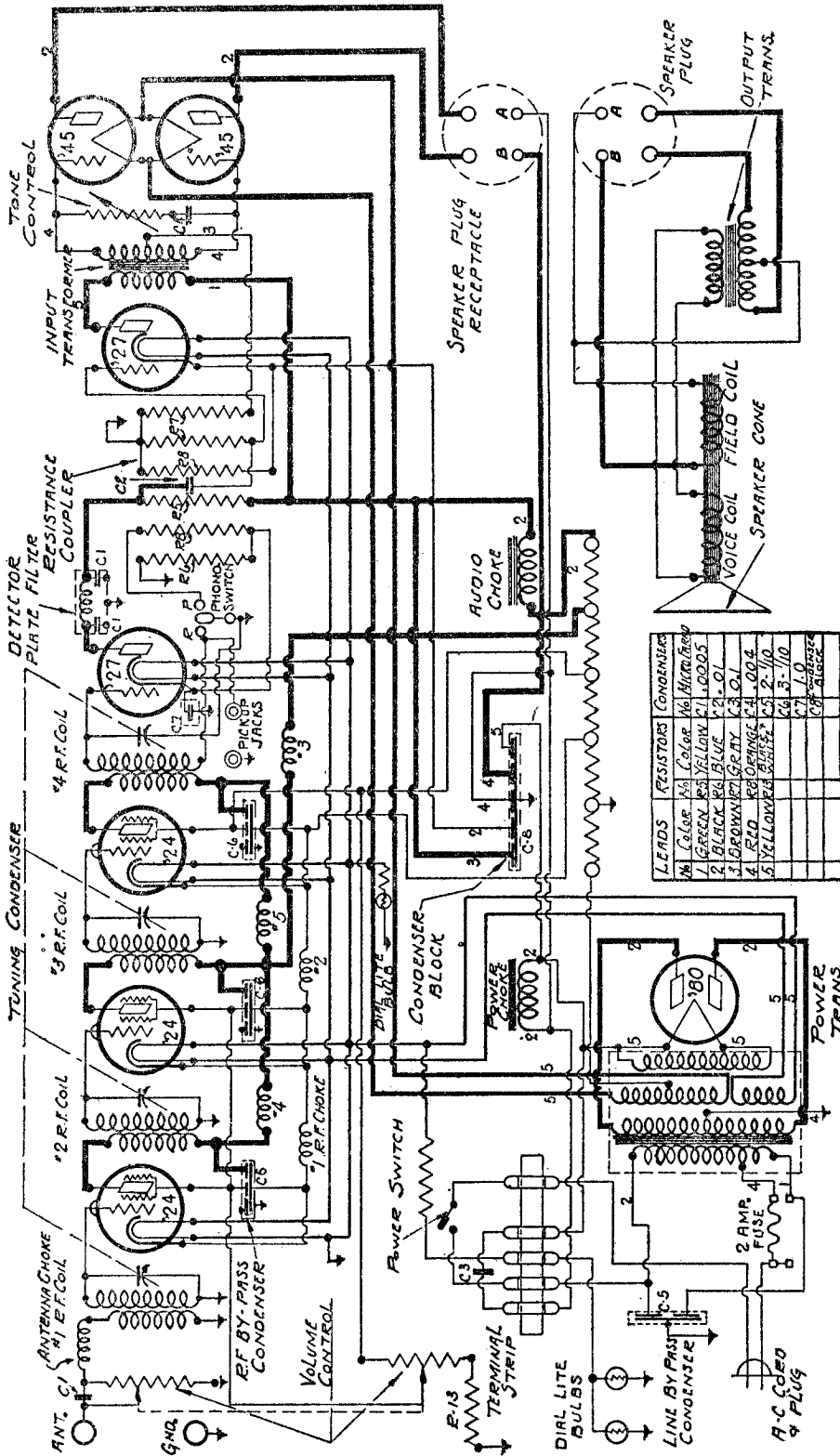
CX-326 30th R.F. CX-326 29th R.F.

Rect. ○

DAY-FAN
 CHASSIS MODEL 5091
 1929 - 1930

MODEL 120,130,140
Below Serial
29100A-1700B

GENERAL MOTORS RADIO CORP

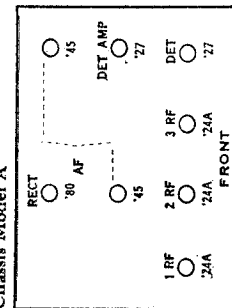


Circuit Diagram of Chassis with Serial Numbers Below 29100A and 1700B.

TUBE IN SOCKET	TYPE OF TUBE	POSITION	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET				MILLIAMPERES				
			PLATE	CONTROL	CATHODE	SCREEN					
1	24	1 R.F.	2.2	140	-2	60	+2	-	1.5	2.5	1
2	24	2 R.F.	2.2	140	-2	60	+2	-	1.5	2.5	1
3	24	3 R.F.	2.2	140	-2	60	+2	-	1.5	2.5	1
4	27	DET.	2.2	100	-	15	+5	-	.5	2.5	2
5	45	2 A.F.	2.2	135	-	48	-	-	4.5	5.5	1.3
6	45	2 A.F.	2.3	235	-	85	-	-	25	29	4
7	45	2 A.F.	2.3	235	-	25	-	-	25	29	4
8	80	RECT.	4.5	-	-	-	-	-	45	45	-

Models 120, 130 & 140
(Chassis Models "A" and "B")

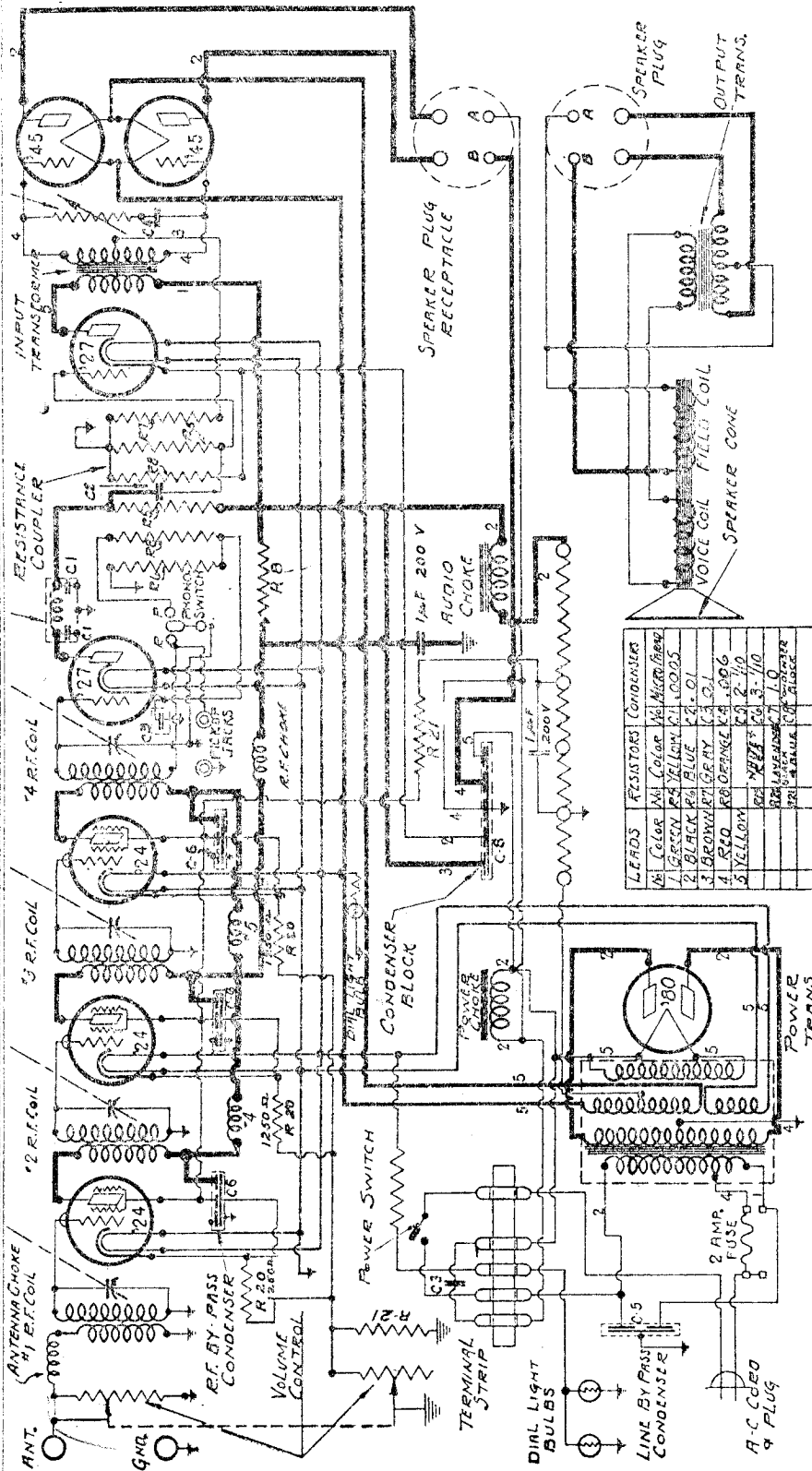
Chassis Model A



MODEL 120,130,140
Between Serial
29100A-62100A
1700B-1946B

GENERAL MOTORS RADIO CORP.

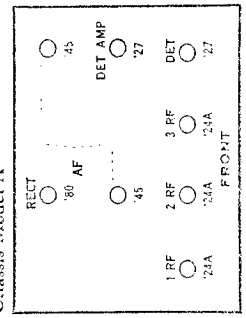
Models 120, 130 & 140
(Chassis Models "A" and "B")



LEADS	RESISTORS	CONDENSERS
1 GREEN	1M	100000
2 BLACK	1/2M	10000
3 BROWN	1/4M	1000
4 RED	1/10M	100
5 YELLOW	1/5M	10
6 BLUE	1/20M	1
7 VIOLET	1/50M	1/10
8 PURPLE	1/100M	1/100
9 WHITE	1/1000M	1/1000

Circuit Diagram of Chassis with Serial Numbers Between 29100A and 1700B and 1946B. 62100A ; and Pl. Cur.

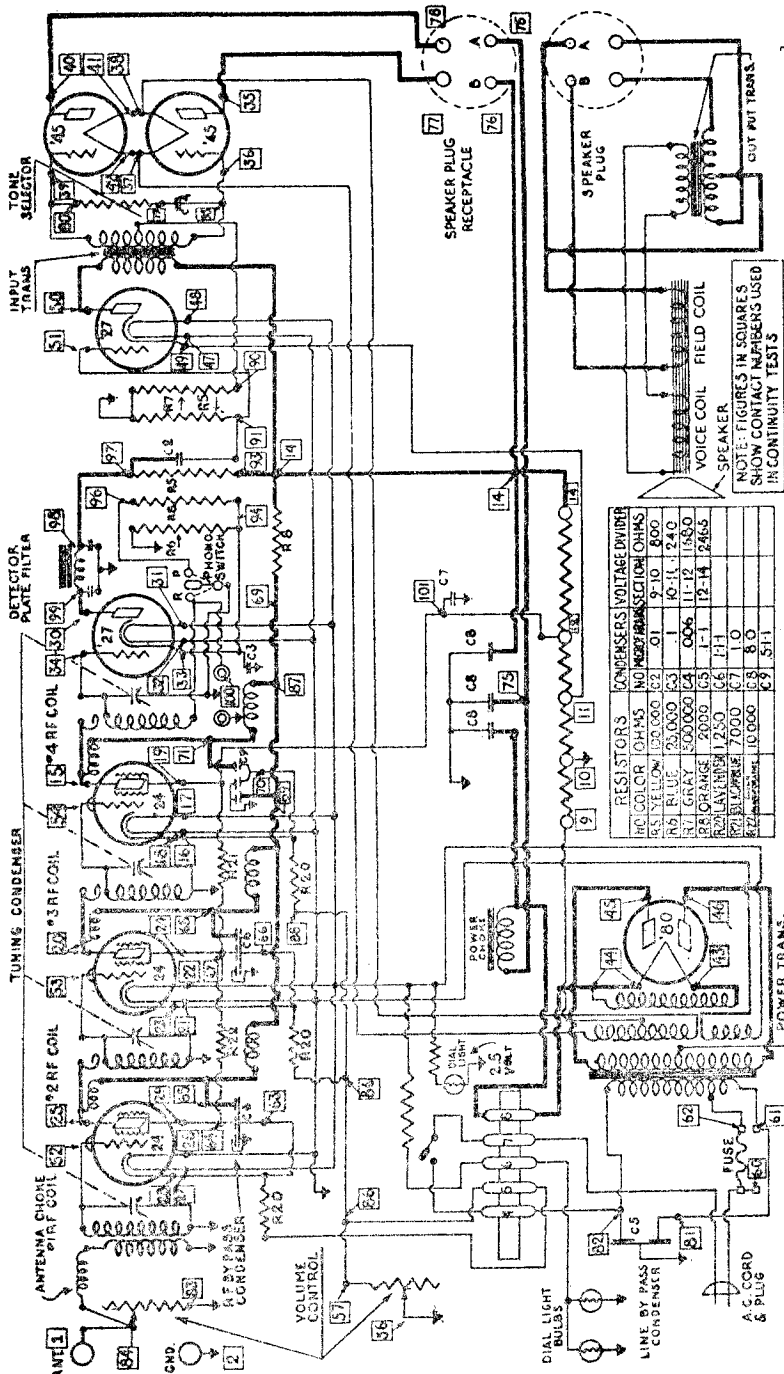
Tube	File V.	Pl. V.	C.G. Volts	S.G. Volts	Cath. Volts	(MA)
RF-1	2.3	150	- 3	55	3	2.
RF-2	2.3	150	- 3	55	3	2.
RF-3	2.3	150	- 3	55	3	2.
Det.	2.3	100	- 8	..	10	.2
AF-1	2.3	140	- 3	..	10	4.
AF-2	2.3	220	-12	..	..	30.
AF-2	2.3	220	-12	..	..	30.
Rect	4.5	..	..	..	..	100.



* Line Voltage - 110 Volume Control on Full

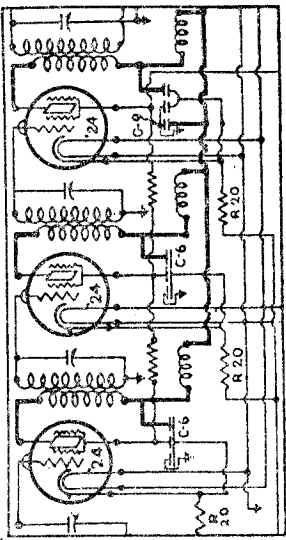
MODEL 120,130,140
Above Serial
62100A-1964B

GENERAL MOTORS RADIO CORP.



NOTE: FIGURES IN SQUARES SHOW CONTACT NUMBERS USED IN CONTINUITY TESTS

RESISTORS	CONDENSERS	VOLTAGE DIVIDER
HC COLOR	OHMS	NO. OF SECTIONS
45	YELLOW	50,000
52	ORANGE	10,000
53	RED	1,000
54	BROWN	100
55	BLACK	10
56	GRAY	500,000
57	GRAY	500,000
58	ORANGE	20,000
59	ORANGE	20,000
60	ORANGE	20,000
61	ORANGE	20,000
62	ORANGE	20,000
63	ORANGE	20,000
64	ORANGE	20,000
65	ORANGE	20,000
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93	ORANGE	20,000
94	ORANGE	20,000
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96	ORANGE	20,000
97	ORANGE	20,000
98	ORANGE	20,000
99	ORANGE	20,000
100	ORANGE	20,000

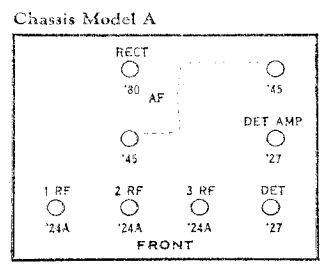


The above diagram shows the circuits of sets using the R. F. Coils with the single turn primaries. The insert shows the part of the circuit which is different from the above, in sets using the original type R. F. Coils.

Sets with Serial Numbers Above 62100A

TUBE IN SET ANALYSER						
Type of Tube	Position of Tube	"A" Volts	"G" Volts	"C" Volts	Screen Volts	Normal Plate Current MA
'24	1st R. F.	2.3	170	— 3	60	2.
'24	2nd R. F.	2.3	170	— 3	68	2.
'24	3rd R. F.	2.3	170	— 3	75	2.
'27	Detector	2.3	100	— 12	—	.2
'27	1st A. F.	2.3	165	— 3	—	4.
'45	2nd A. F.	2.3	235	— 12	—	35.
'45	2nd A. F.	2.3	235	— 12	—	35.
'80	Rectifier	4.5	—	—	—	100.

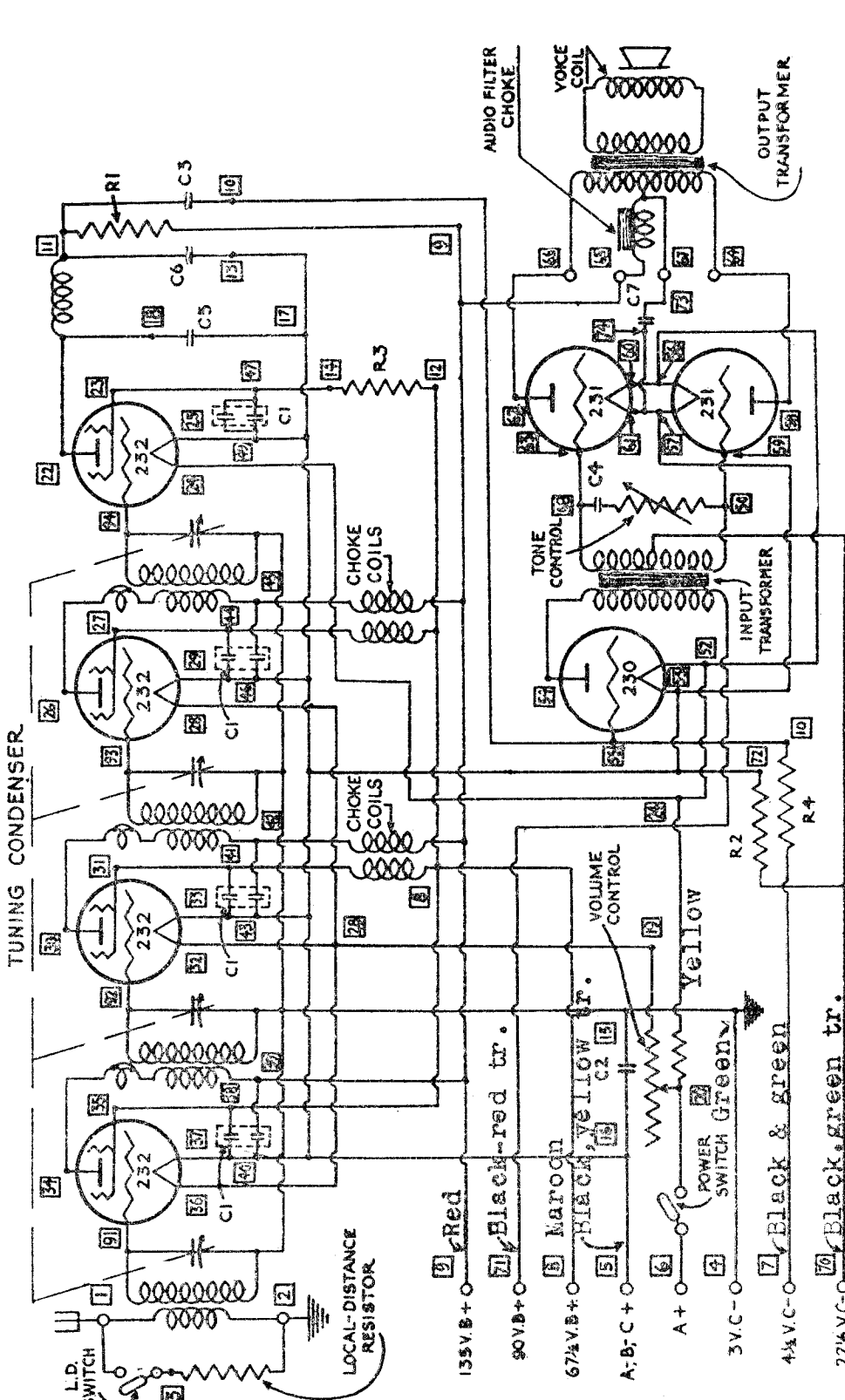
Line Voltage 110 Volume Control on Full



Models 120, 130 & 140
(Chassis Models "A" and "B")
Circuit Diagram of Chassis with Serial
Numbers Above 62100A and 1964B.

GENERAL MOTORS RADIO CORP.

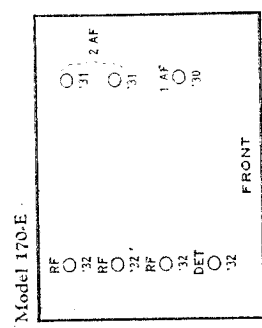
MODEL 170-(E)
Schematic



Tube	Fil	Plate	Screen	Plate Crnt.
1 RF	1.7	140	68	1.2 ma
2 RF	1.7	140	68	1.4
3 RF	1.7	140	68	1.5
Det	1.7	80	10	.2
1 AF	1.7	85	-	1.5
2 AF	1.7	135	-	7.

RESISTORS		CONDENSERS	
NO.	BODY END BAND	OHMS	NO MICROFARADS
R1	BROWN BLACK YELLOW	100,000	C1 .1 - .1
R2	RED BLACK YELLOW	200,000	C2 .5
R3	GREEN BLACK YELLOW	500,000	C3 .01
R4	RED BLACK GREEN	2,000,000	C4 .002
			C5 .0005
			C6 .0001
			C7 1.0

Model 170, Battery Powered Receiver
(Chassis Model E)

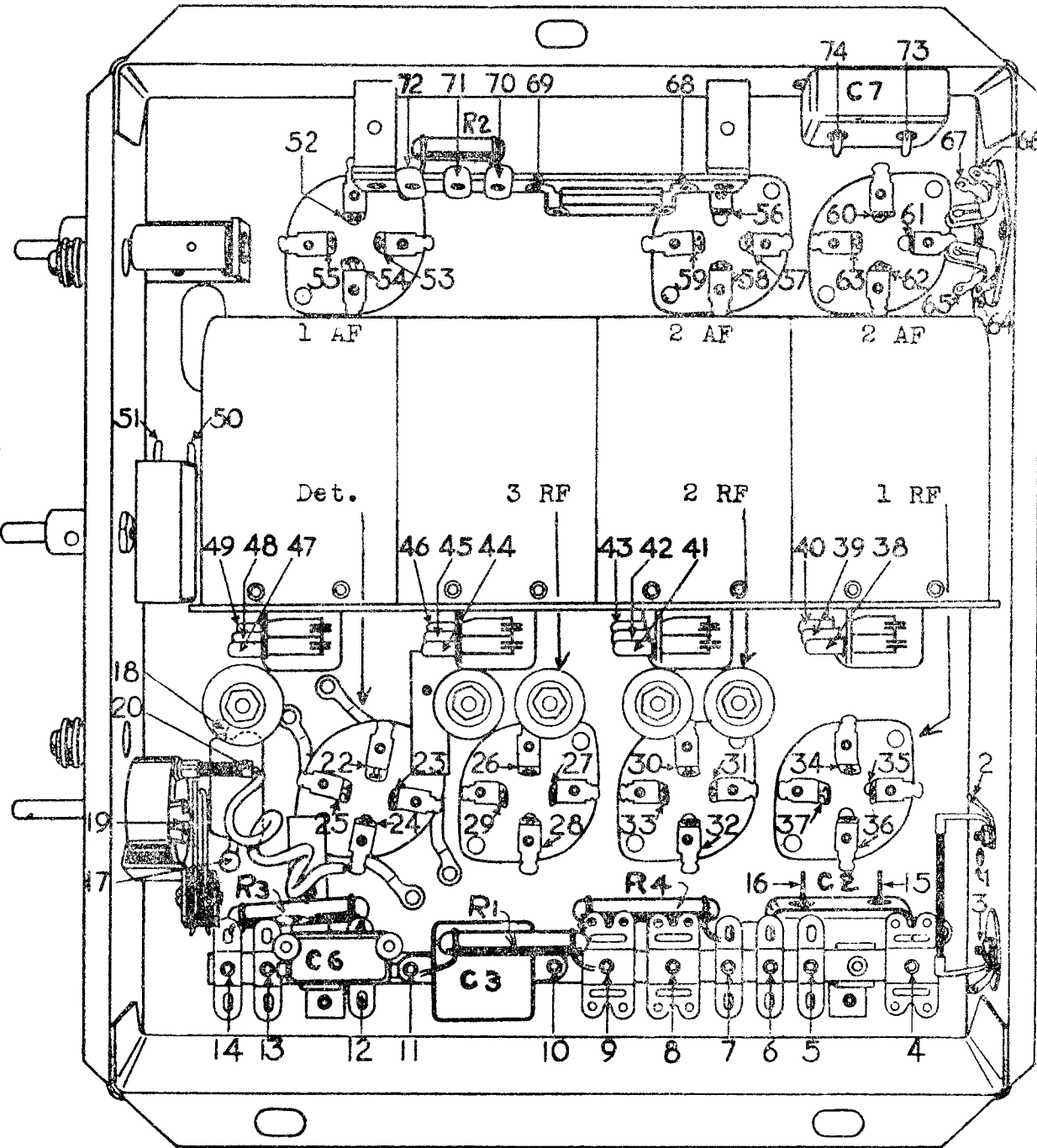


Model 170-E

MODEL 170-(E)
Chassis

GENERAL MOTORS RADIO CORP.

Chart showing contact numbers used when making continuity tests.



NOTE: NOS. 91, 92, 93 & 94
ARE GRID CAPS OF 1ST, 2ND & 3RD
R.F. TUBES AND DETECTOR TUBE.

Model 170 Receiver
Chassis Model E
(PIONEER BATTERY POWERED RECEIVER)

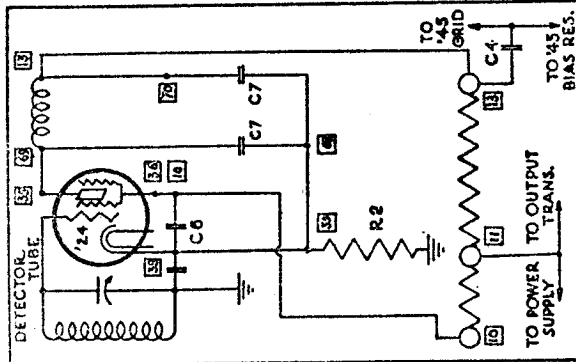
FILTER UNIT

Filter Units, Part No. 1202735, have been supplied to the field with instructions for installation on Model "E" Chassis with Serial Nos. below 3205-E only. All receivers above 3205-E have the Filter Units incorporated in the chassis and speaker. These parts include the Audio Filter Choke which is mounted on the speaker and one 1 Mfd. condenser located in the Chassis. On sets with Serial Numbers below 3205-E, use No. 1951 Speaker. Sets with Serial Numbers above 3205-E use Speaker No. 1952.

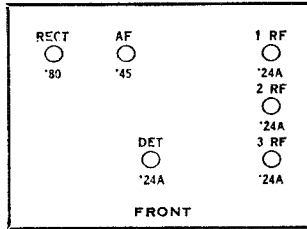
GENERAL MOTORS RADIO CORP.

MODEL 110, 180, 190
Little General

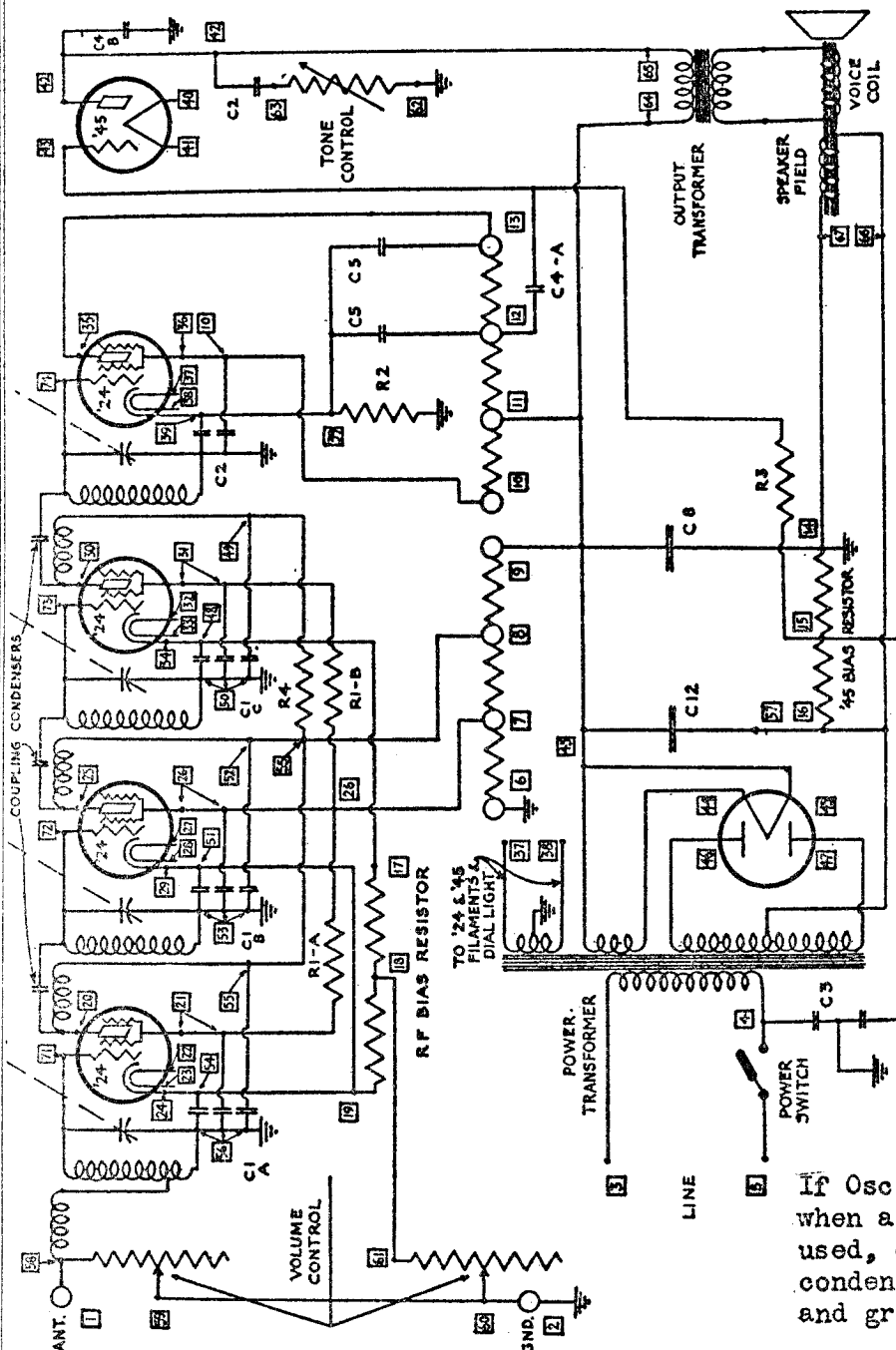
Models 110, 180, 190



The above insert shows a part of the Detector Circuit for Chassis with serial numbers above 23156 MA and 1611 M B. In the Chassis with Circuits as shown above, the Detector Plate Filter Circuit includes a choke coil in the Plate Circuit instead of one section of the Voltage Divider as in previous Chassis.



NOTE: In Chassis with serial numbers above 23156 M A and 1611 M B, the Tone Control Condenser and the Line By-Pass Condenser are included in the same can, with capacities as shown for Condenser No. C 2.



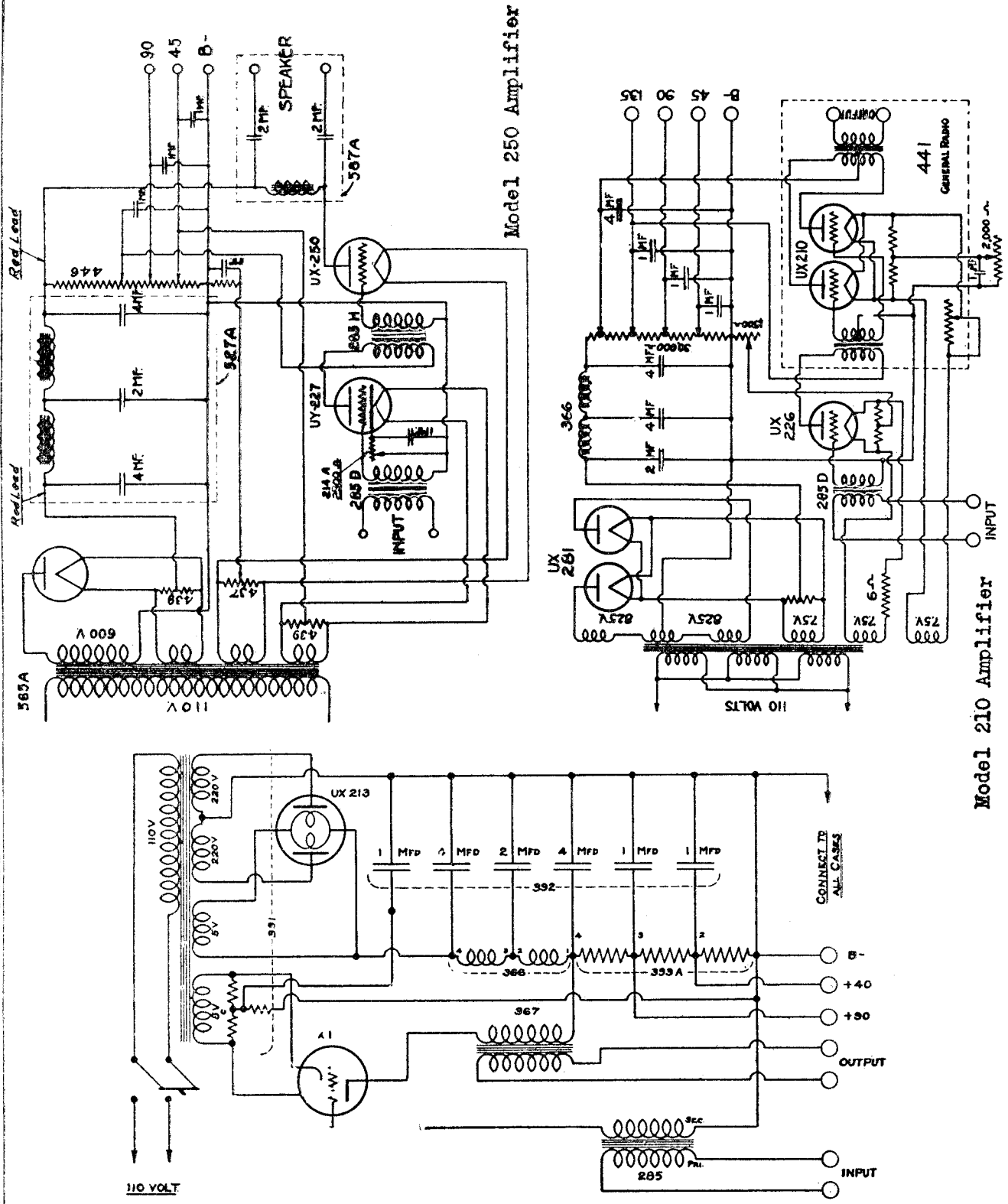
FIXED CONDENSERS NO.	CAPACITY	SINGLE FIXED RESISTORS NO.	OHMS	COLOR	VOLTAGE DIVIDER SECTION RESISTANCE	.45 BIAS RESISTOR SECTION RESISTANCE
C-1	1-1 Mfd.	R-1	15,000	Brown	6-7	2,000 Ohms
C-2	2-1-22 Mfd.	R-2	25,000	Red	7-8	12,000 Ohms
C-3	.01 Mfd.	R-3	500,000	Green	8-9	6,000 Ohms
C-4	.01 Mfd.	R-4	1,000	Insulated	10-11	250,000 Ohms
C-5	.00025 Mfd.				12-13	15,000 Ohms
C-6	5-5 Mfd.				14-15	100,000
C-7	.001 Mfd.				16-17	1,000
C-8	8.0 Mfd.				18-19	500
C-9	.120 Mfd.				20	

TUBE TYPE	FIL.	PLATE CON.	GRID S.	GRID CATHODE	NORMAL MA.	GRID CHANGE
124	1RF	2.4	165	3.1	80	2.5
124	2RF	2.4	165	3.1	92	2.5
124	3RF	2.4	160	3.1	82	2.5
124	DET	2.5	100	6.5	12	.1
145	1AF	2.4	225	3.0	20	.40
180	RECT	4.5	360			

If Oscillation persists when a small aerial is used, connect a .0001 mfd condenser across the aerial and ground posts.

GENERAL RADIO CO

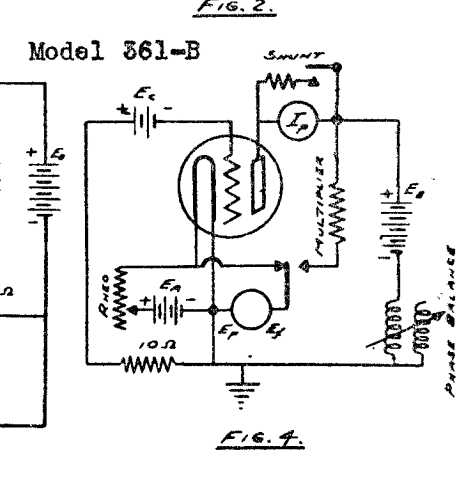
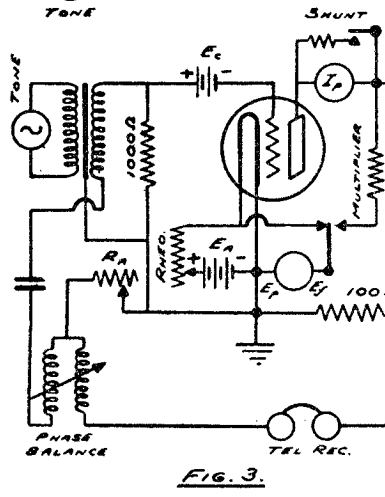
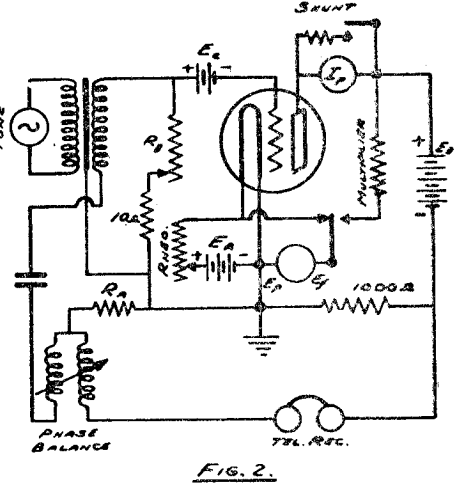
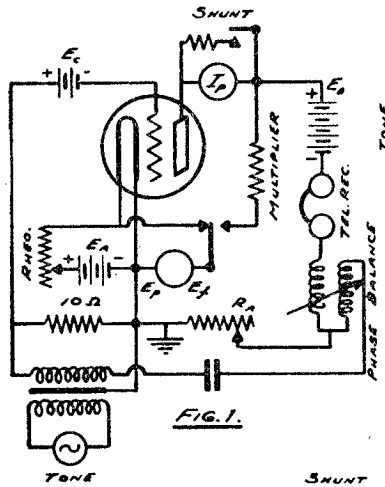
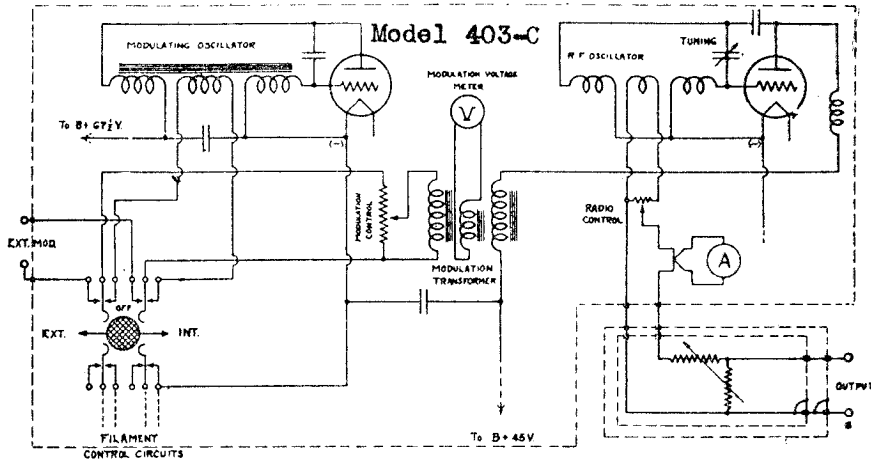
MODEL 250 Amplifier
 MODEL 210 Amplifier
 MODEL 390 Eliminator



Showing the schematic diagram of the Type 390 Rectron "B" Eliminator and Power Amplifier.

MODEL 403-C
MODEL 361-B

GENERAL RADIO CO

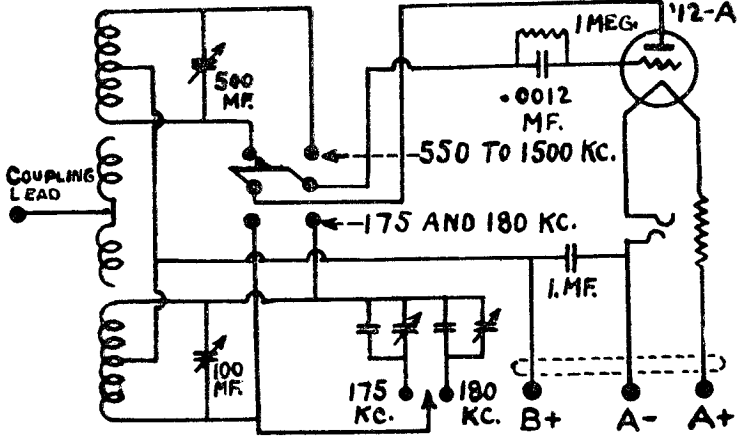


- Figure 1 Amplification Constant.
- Figure 2 Plate Resistance
- Figure 3 Mutual Conductance
- Figure 4 Static characteristics

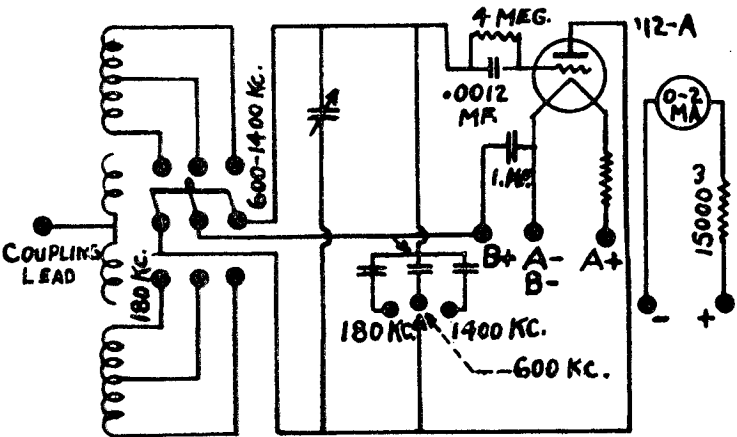
Special adaptors are available for conversion and application of the 361-B bridge to AC tubes.

GENERAL RADIO CO

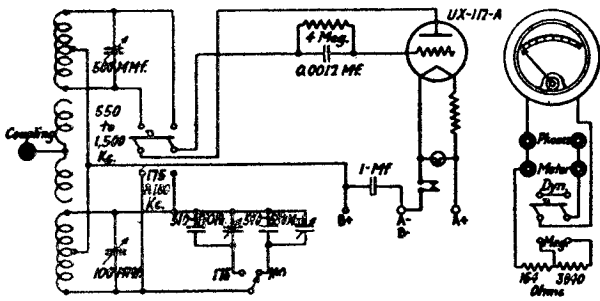
MODEL 360 Oscillator
MODEL 360-A Oscillator
MODEL 320 Oscillator



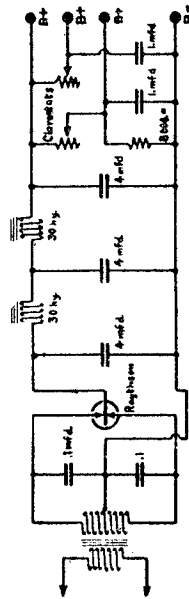
Model 360 Oscillator



Model 320 Oscillator



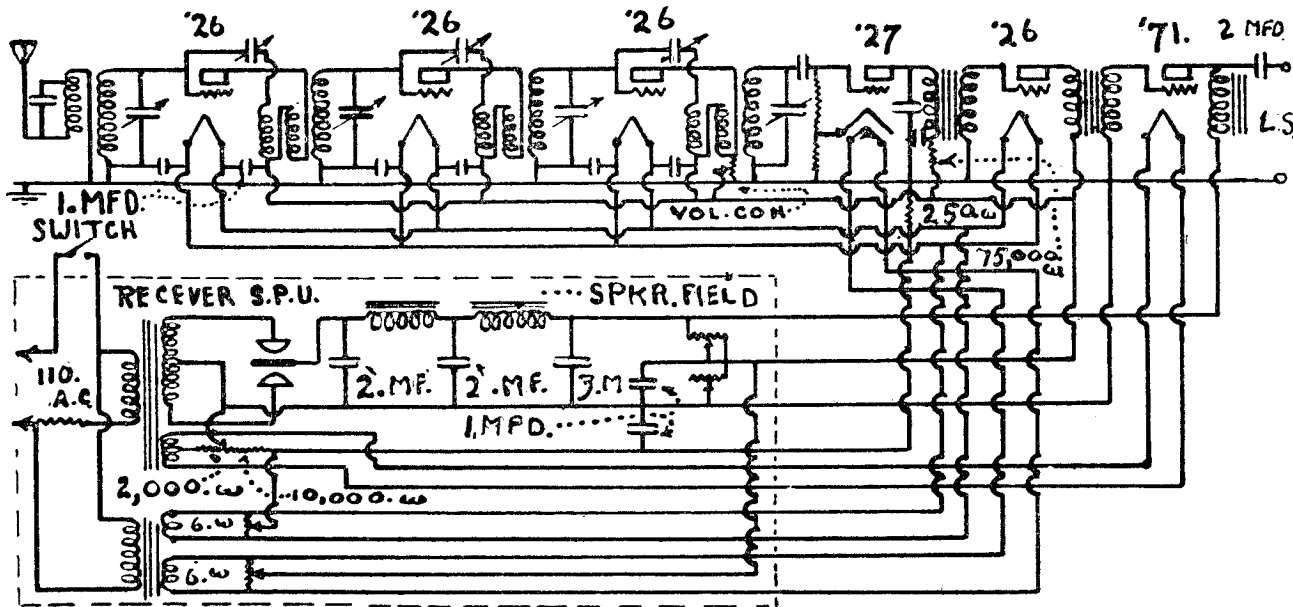
Model 360-A Oscillator



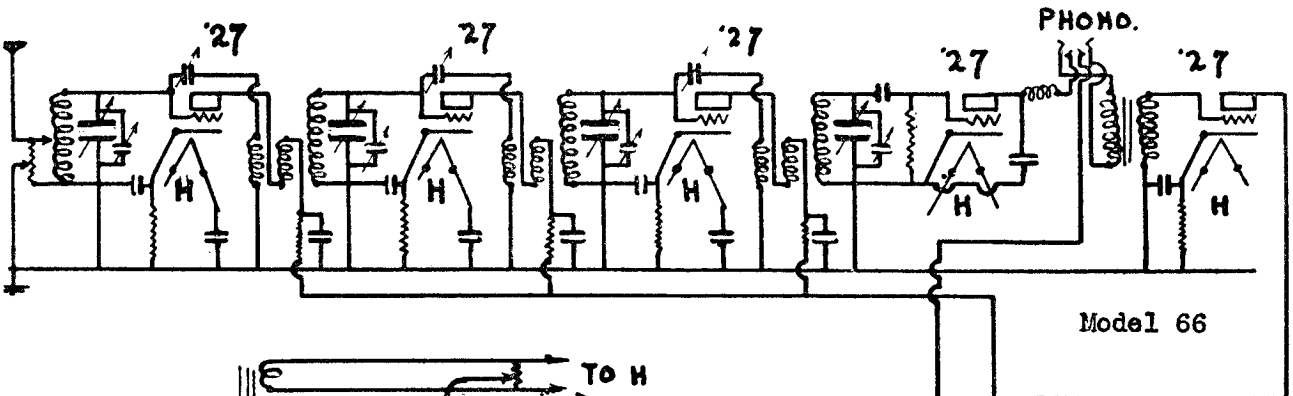
GENERAL RADIO ELIMINATOR

MODEL 60
MODEL 66

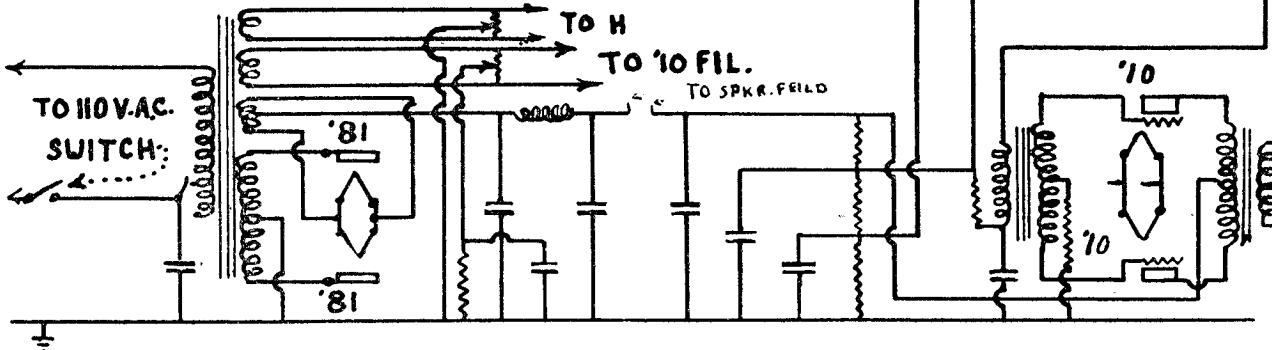
GILFILLAN BROS.



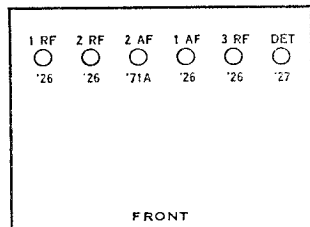
Model 60



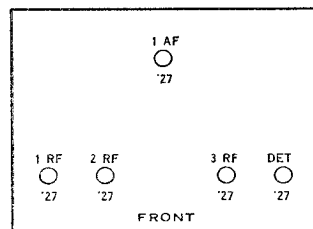
Model 66



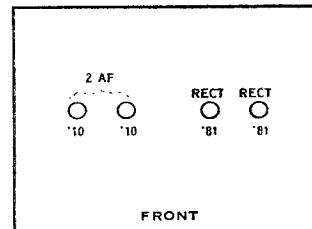
Models 55, 60, 65, 70



Model 66 Chassis

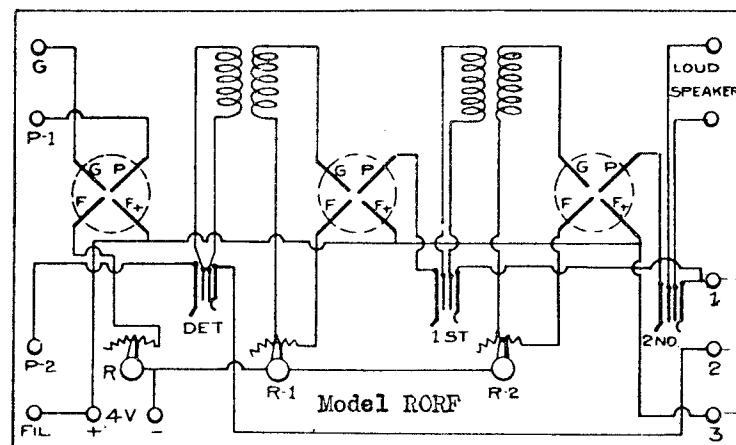
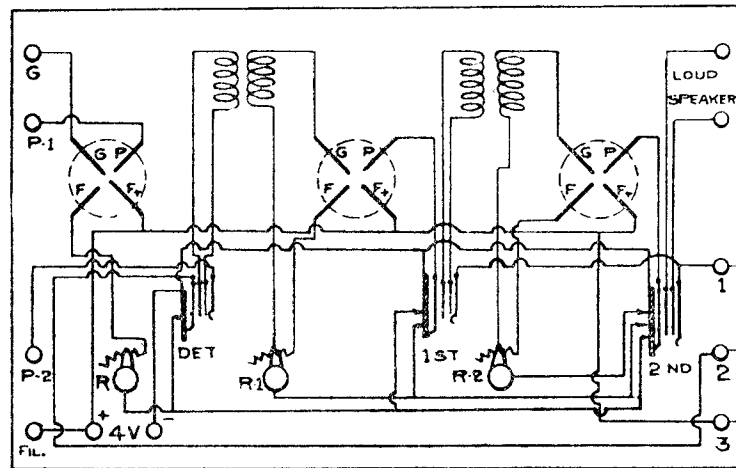
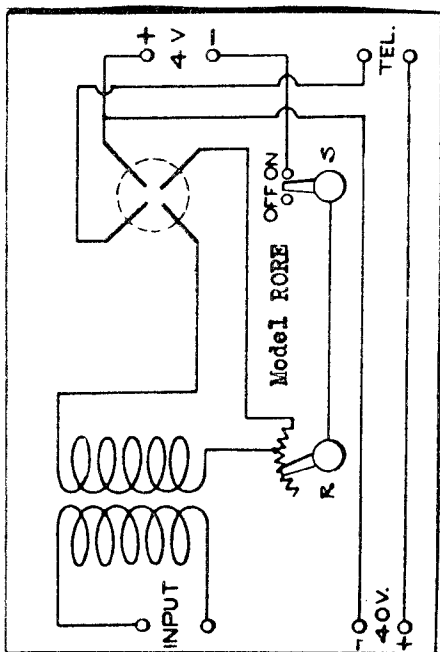
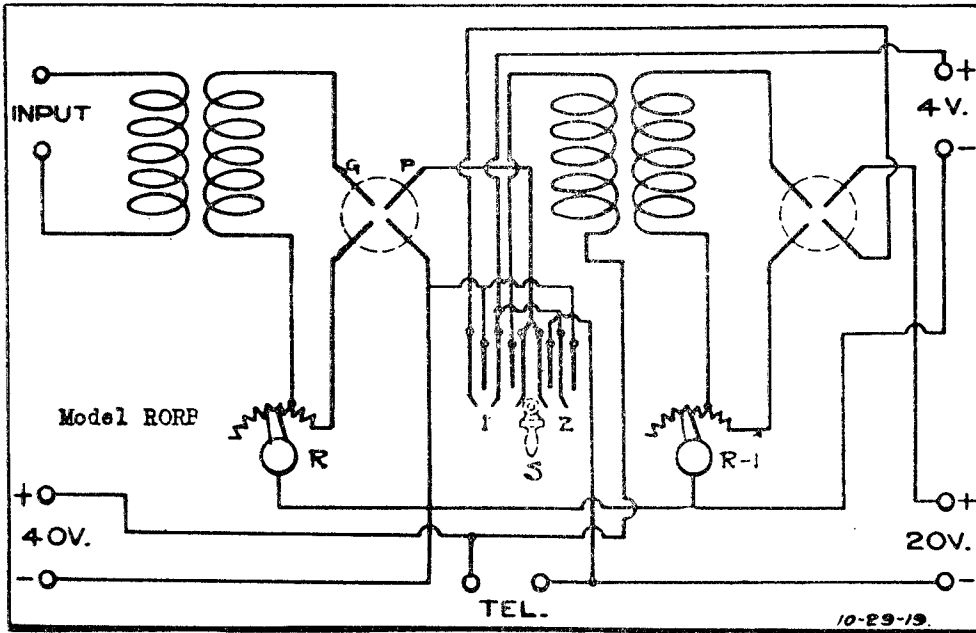


Model 66 Pack



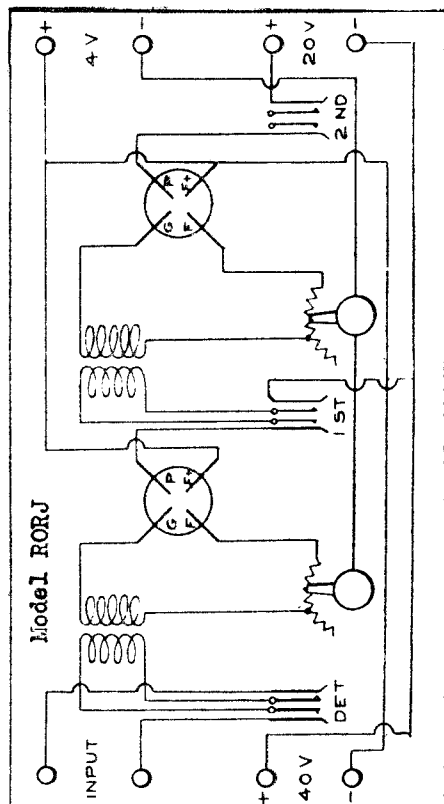
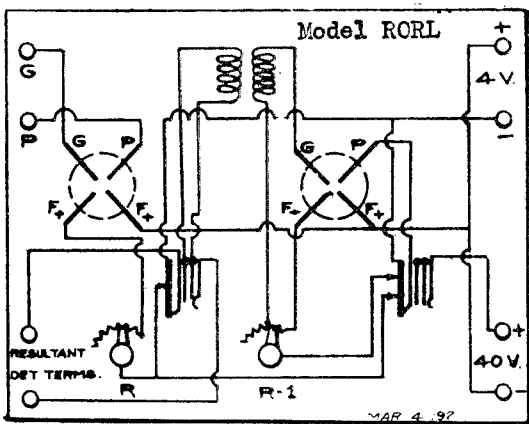
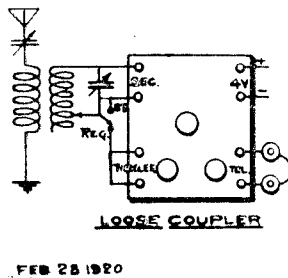
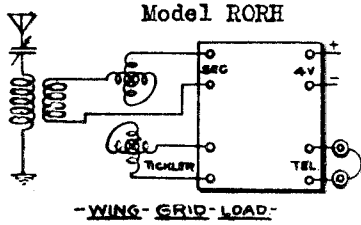
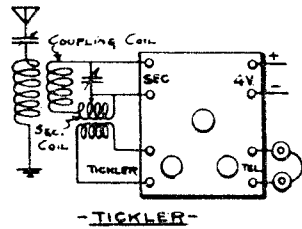
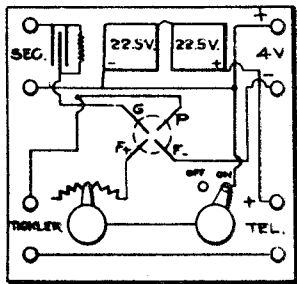
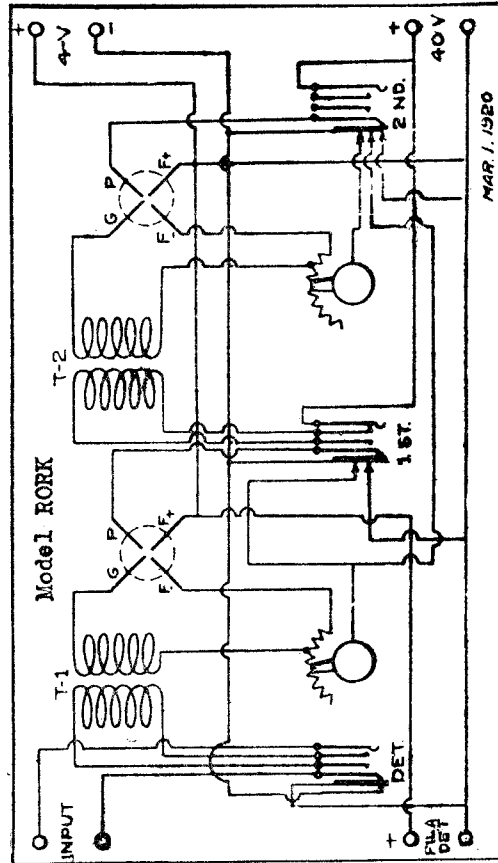
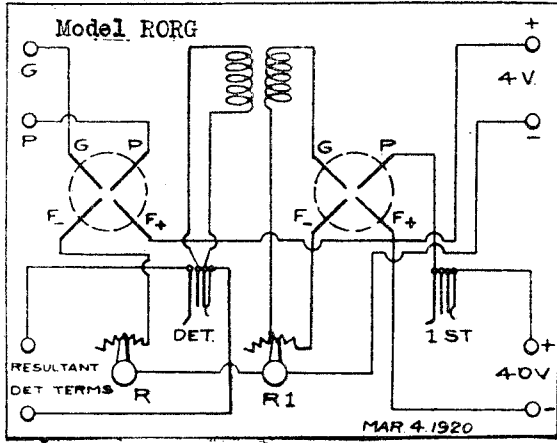
A. H. GREBE & CO.

MODEL RORB
 MODEL RORD
 MODEL RORE
 MODEL RORF



A. H. GREBE & CO.

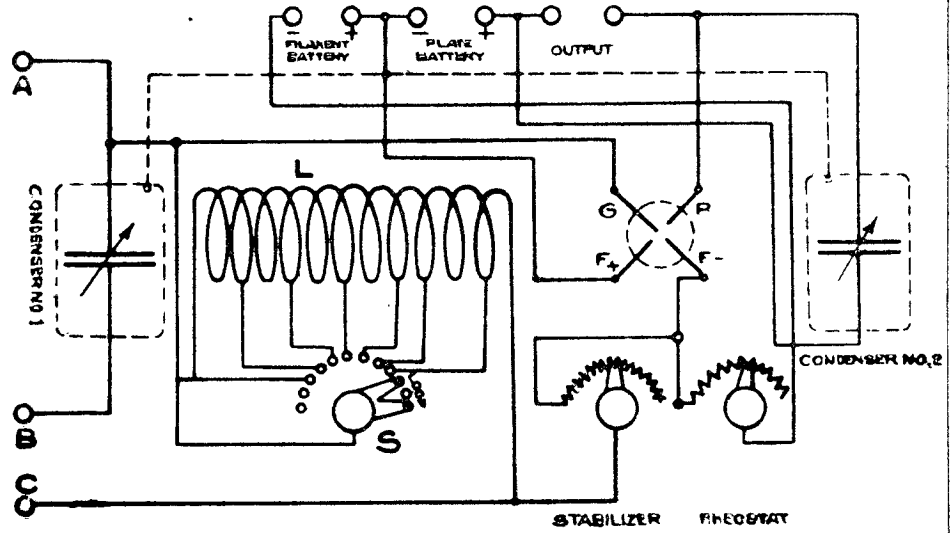
- MODEL RORG
- MODEL RORH
- MODEL RORJ
- MODEL RORK
- MODEL RORL



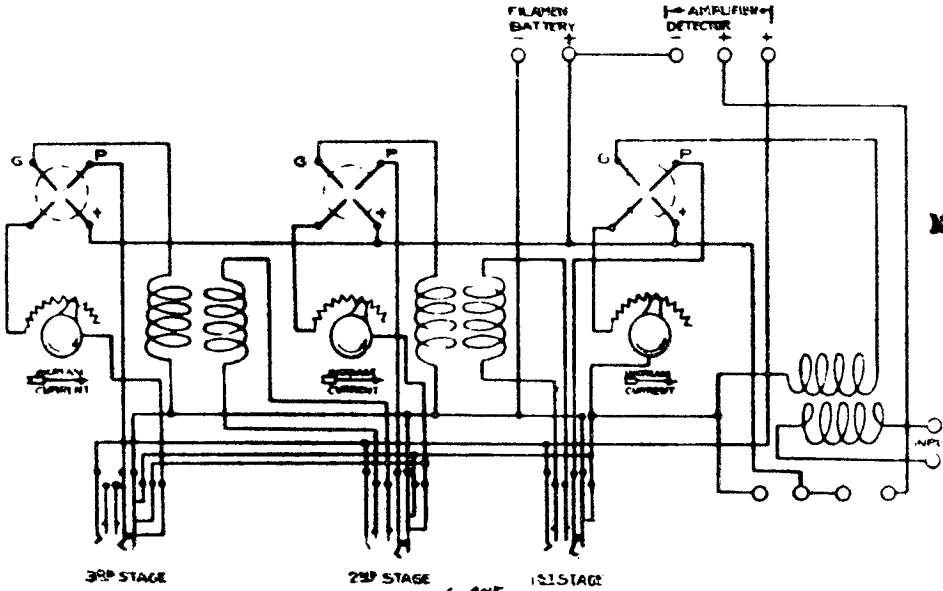
A. H. GREBE & CO.

MODEL RORN
 MODEL RORO
 MODEL RORQ

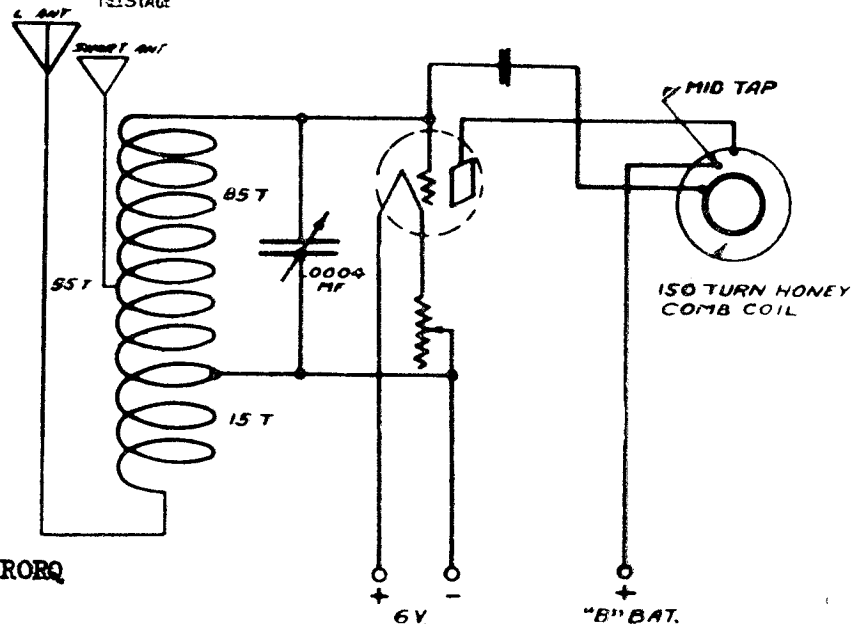
Model RORN



Model RORO



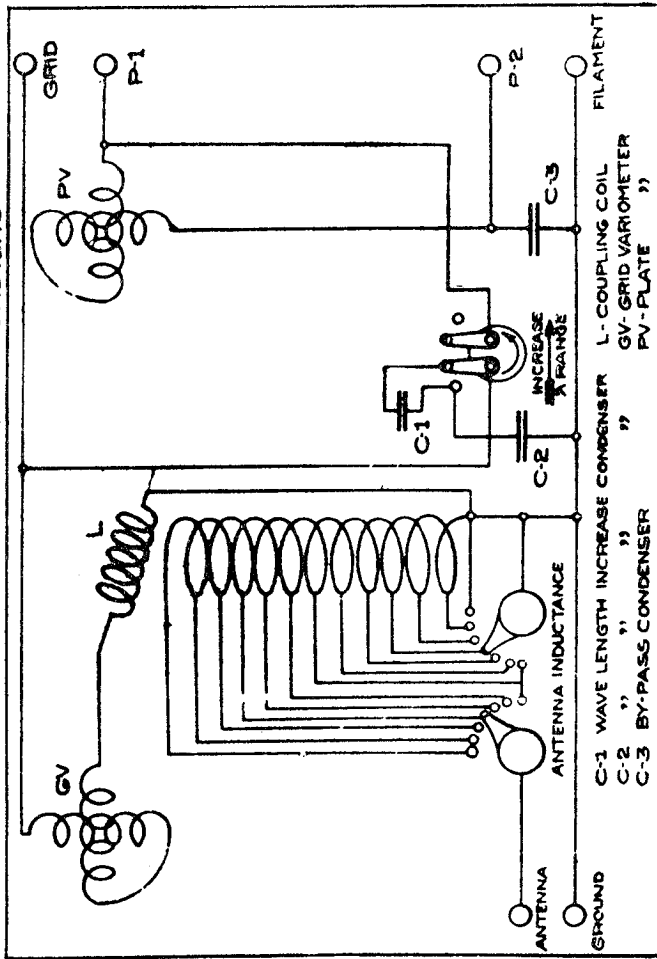
Model RORQ



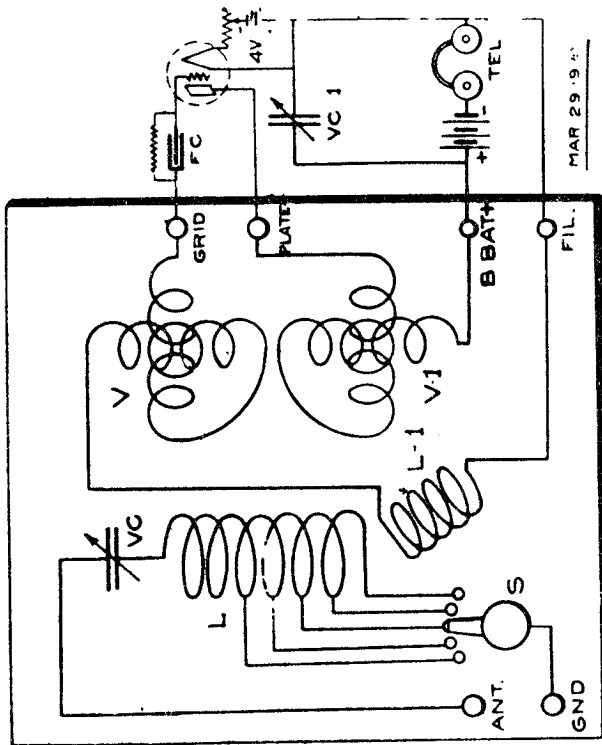
MODEL CR-1 MODEL CR-3
MODEL CR-2 MODEL CR-4

A. H. GREBE & CO.

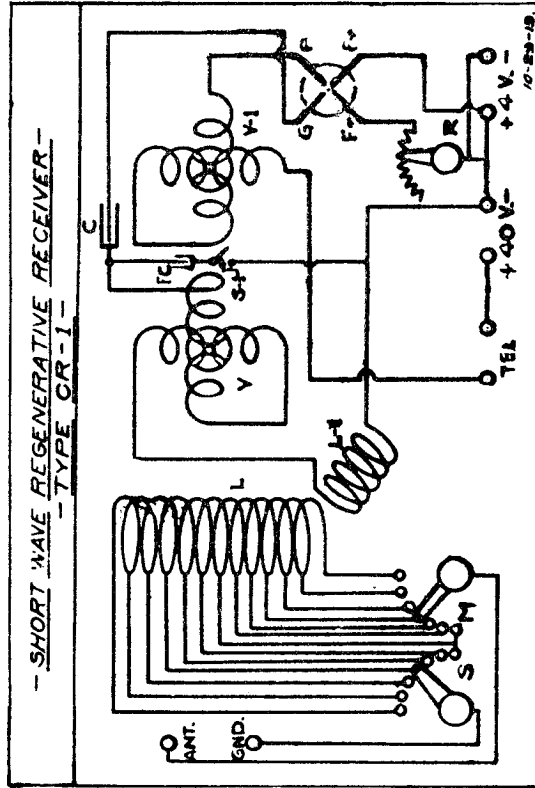
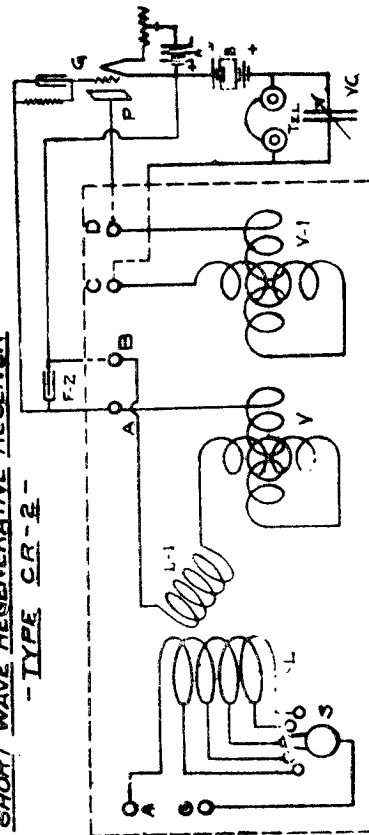
GREBE SHORT-WAVE REGENERATIVE RECEIVER
TYPE CR-3



- SHORT WAVE REGENERATIVE RECEIVER -
- TYPE CR-4 -



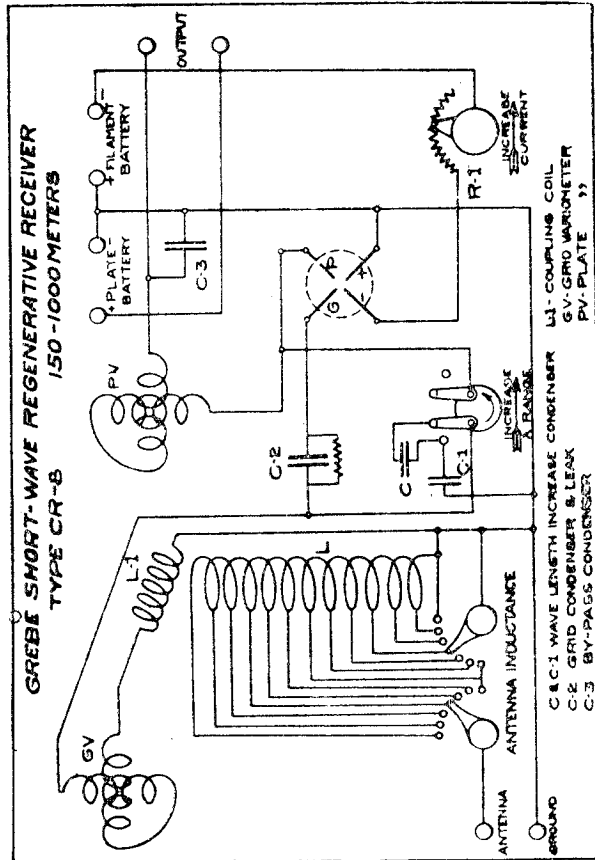
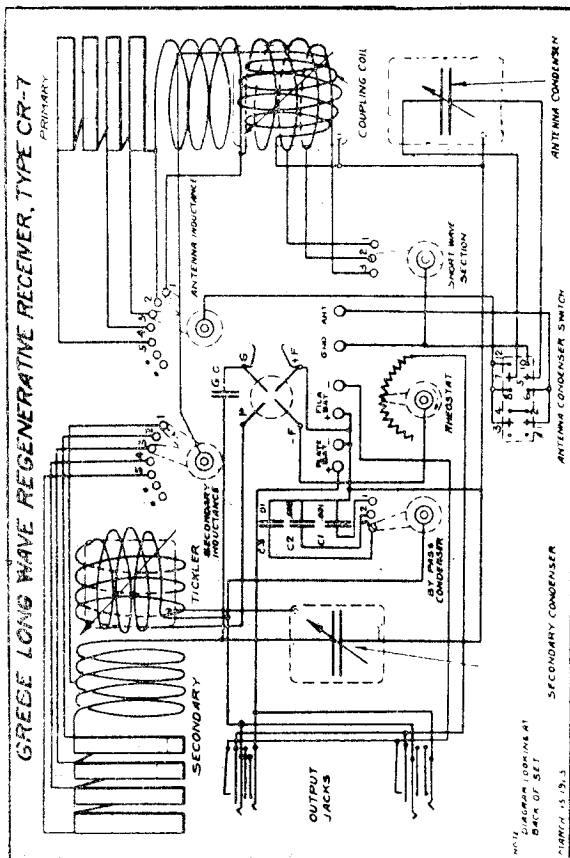
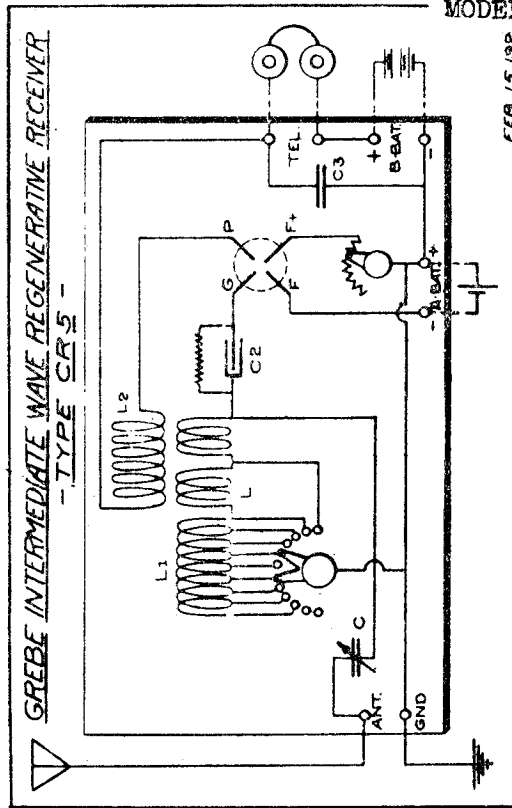
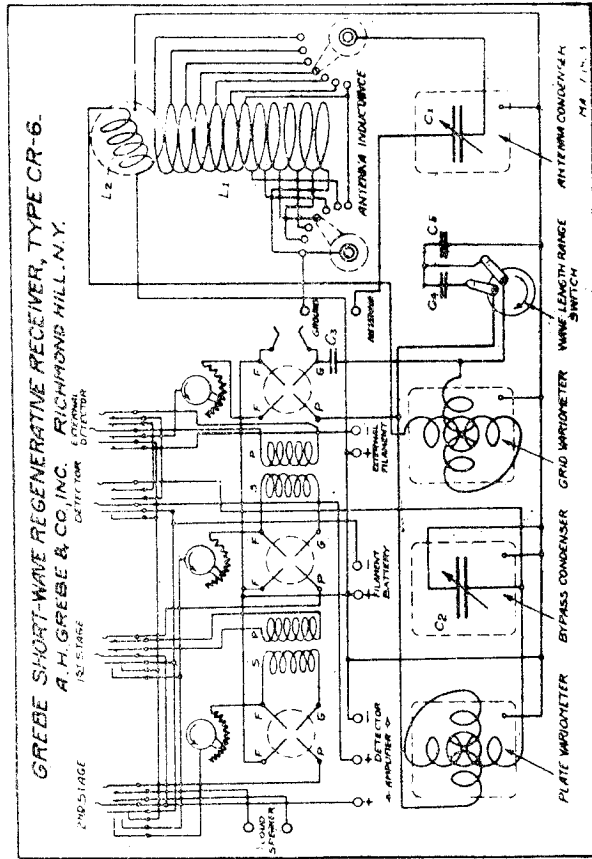
SHORT WAVE REGENERATIVE RECEIVER -
- TYPE CR-2 -



10-28-38

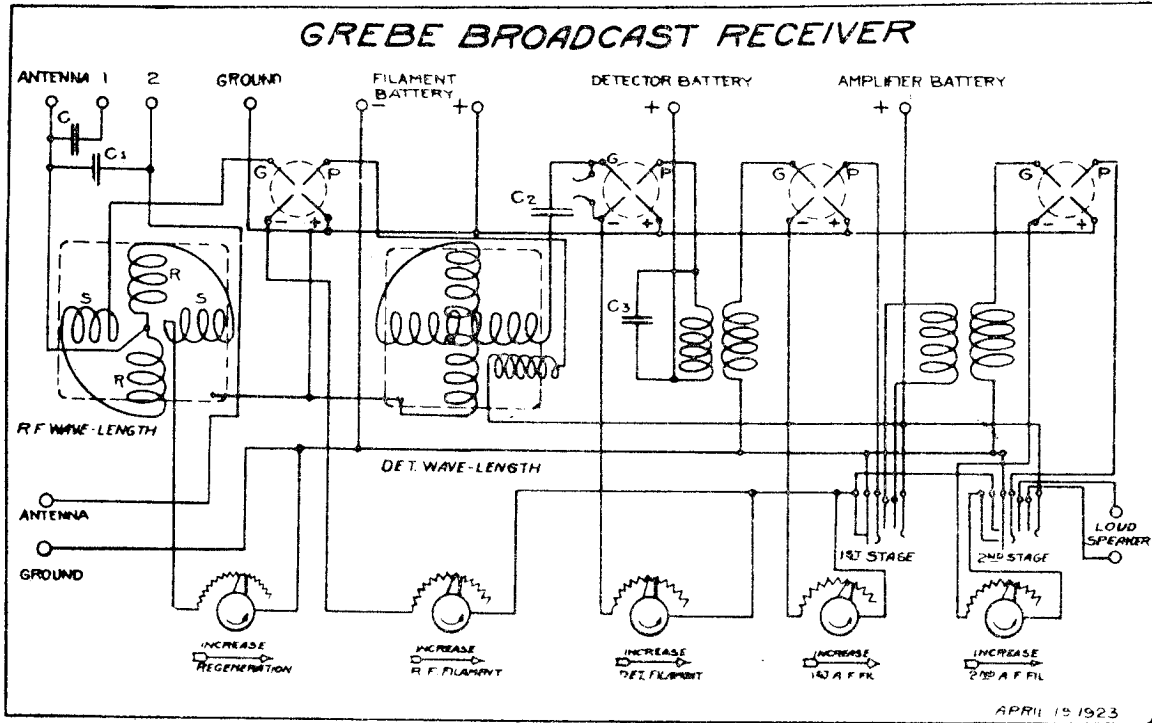
A. H. GREBE & CO.

MODEL CR-5
 MODEL CR-6
 MODEL CR-7
 MODEL CR-8

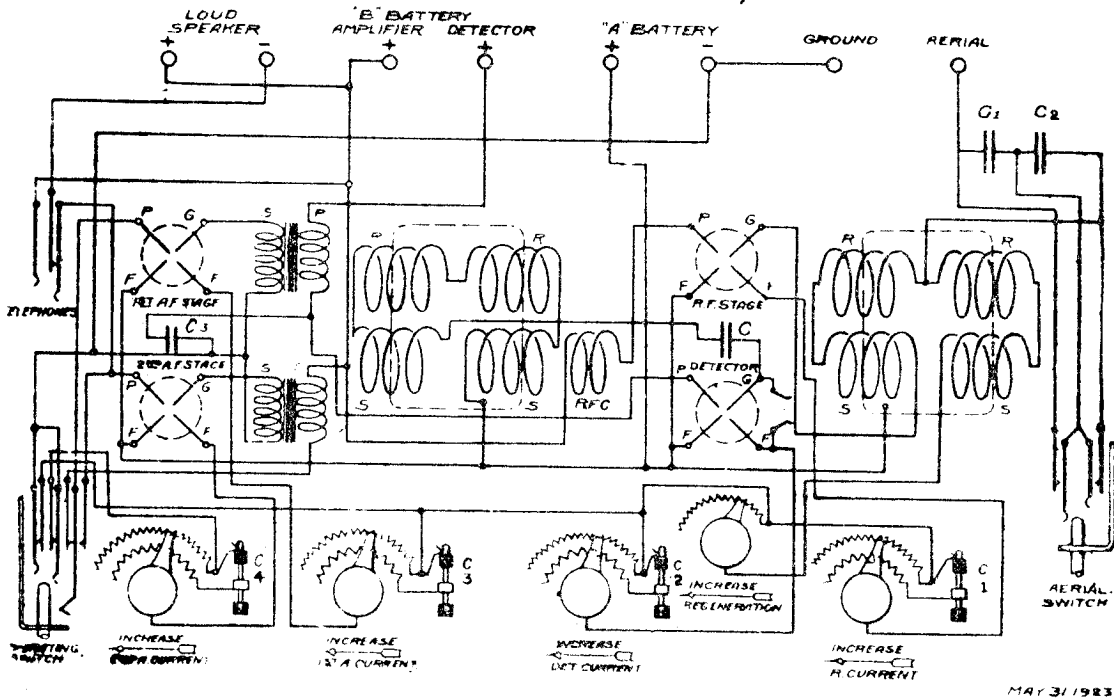


C & C1 WAVE LENGTH INCREASE CONDENSER
 L1 - COUPLING COIL
 G - GRID VARIOMETER
 P - PLATE

MODEL Broadcast Receiver A. H. GREBE & CO.,
MODEL CR-12



GREBE BROADCAST RECENER, TYPE CR-12.



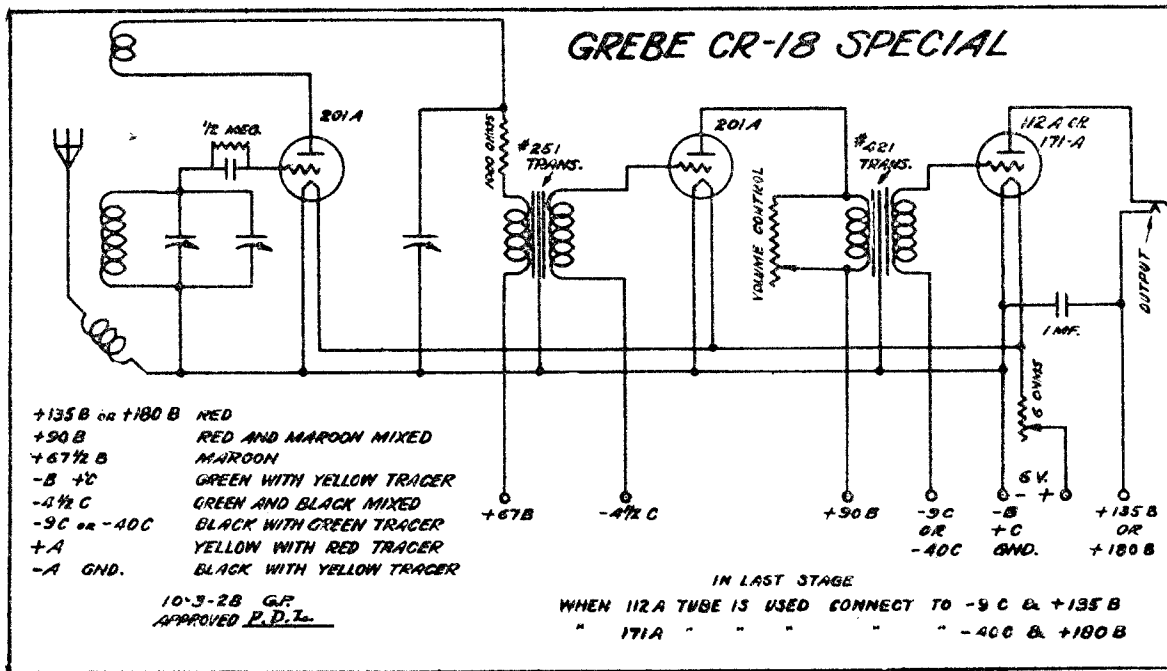
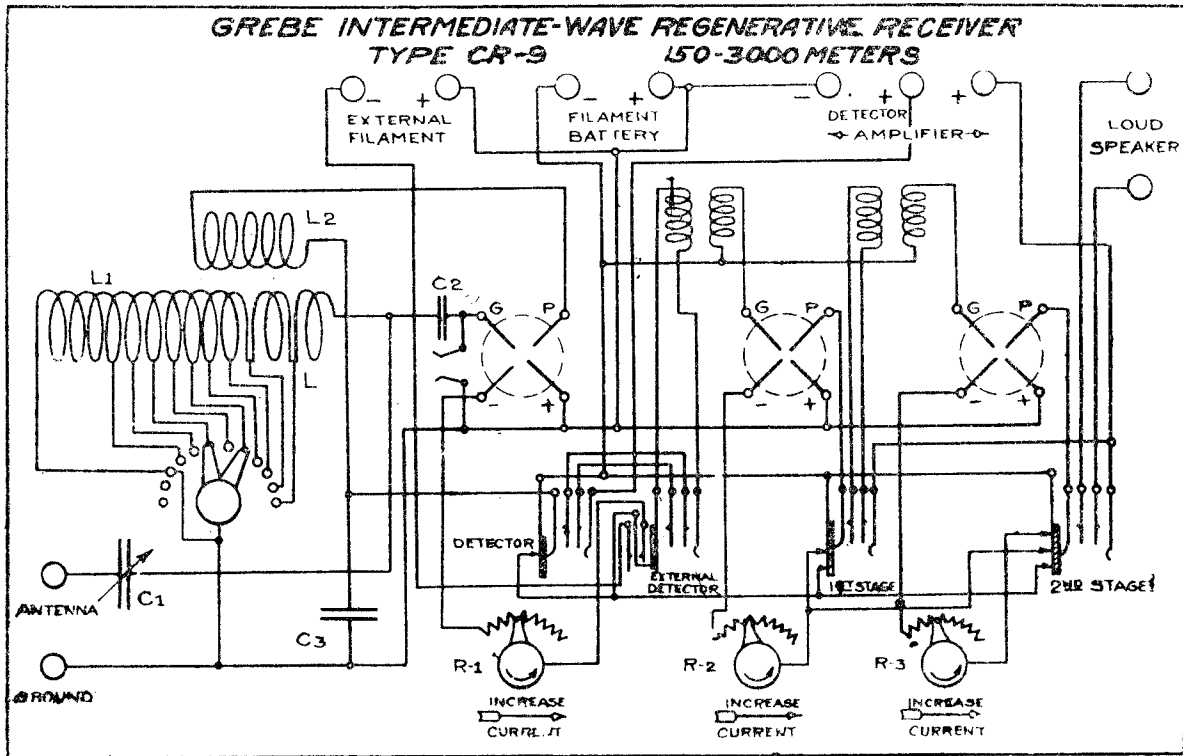
CR-12

(Batt.)

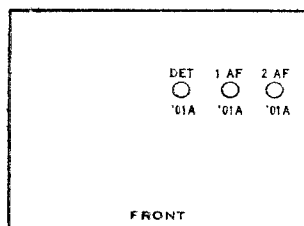
*CX-301A or *CX-299	○ 1st R.F.	*CX-301A or *CX-299	○ 1st A.F.
*CX-301A or *CX-300A or *CX-299	○ Det.	*CX-301A or CX-112A or *CX-299	○ 2nd A.F.

A. H. GREBE & CO.

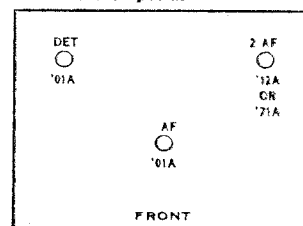
MODEL CR-9
MODEL CR-18(Special)



Model CR9

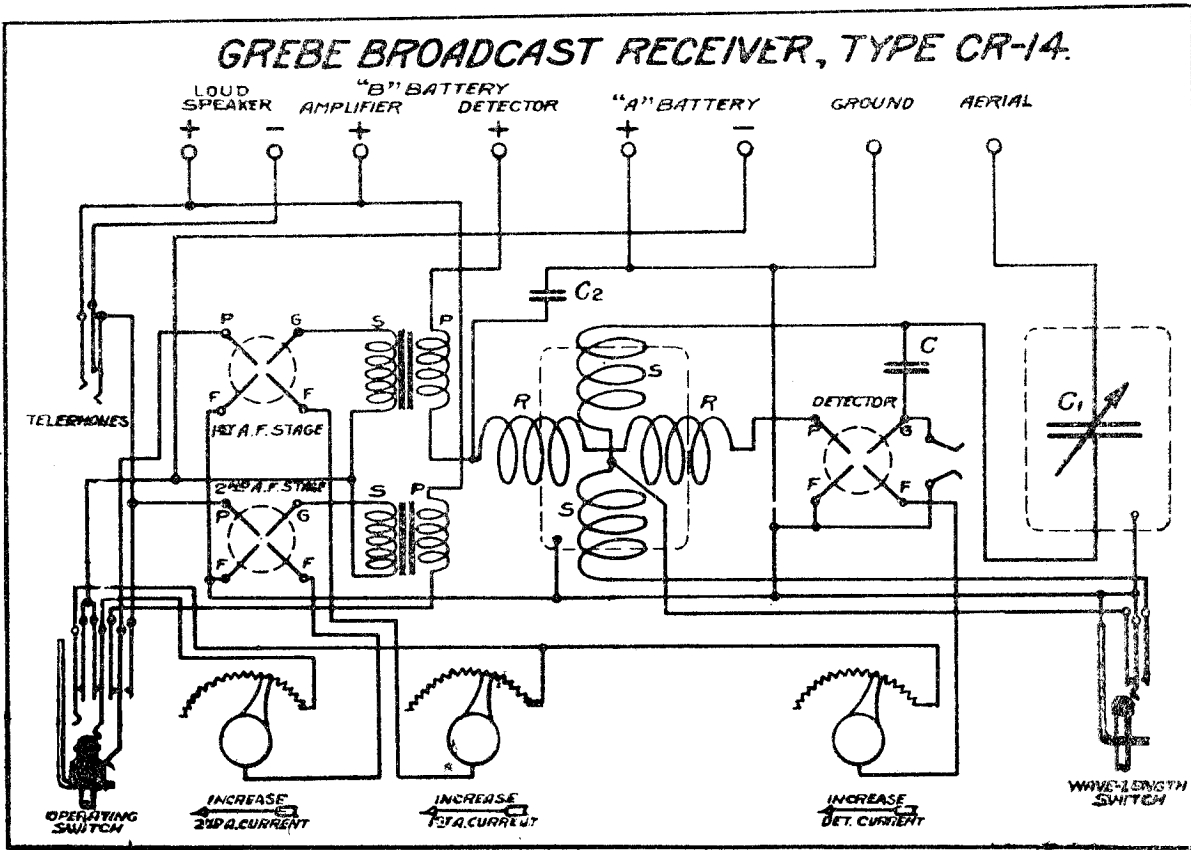


Model CR18 Special



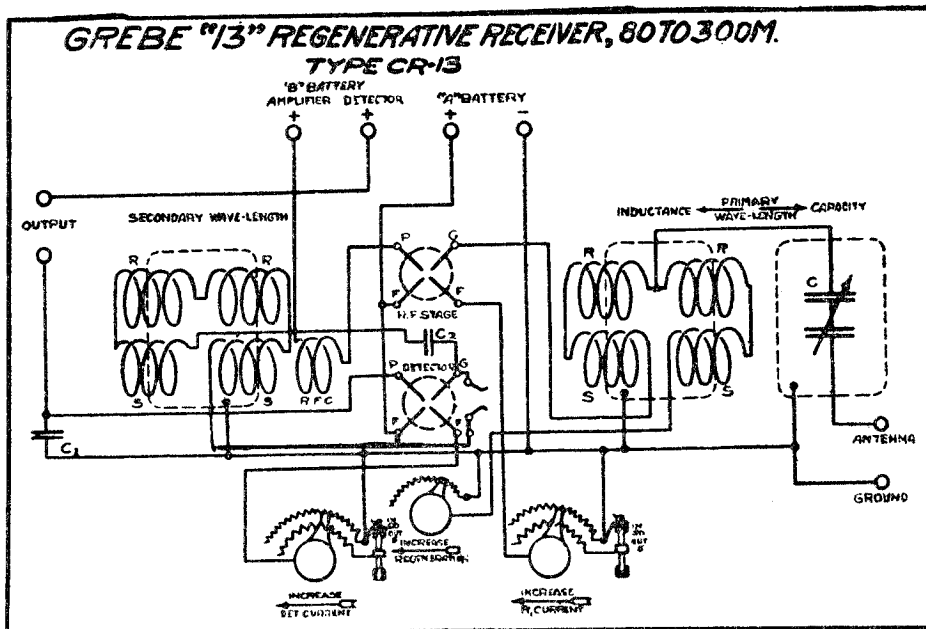
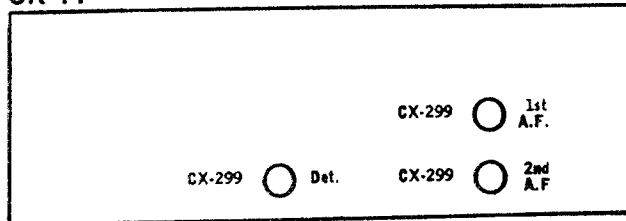
MODEL CR-13
MODEL CR-14

A. H. GREBE & CO.,



CR-14

(Batt.)



A. H. GREBE & CO.

MODEL CR-18

*CR-18—1 Stage A.F.

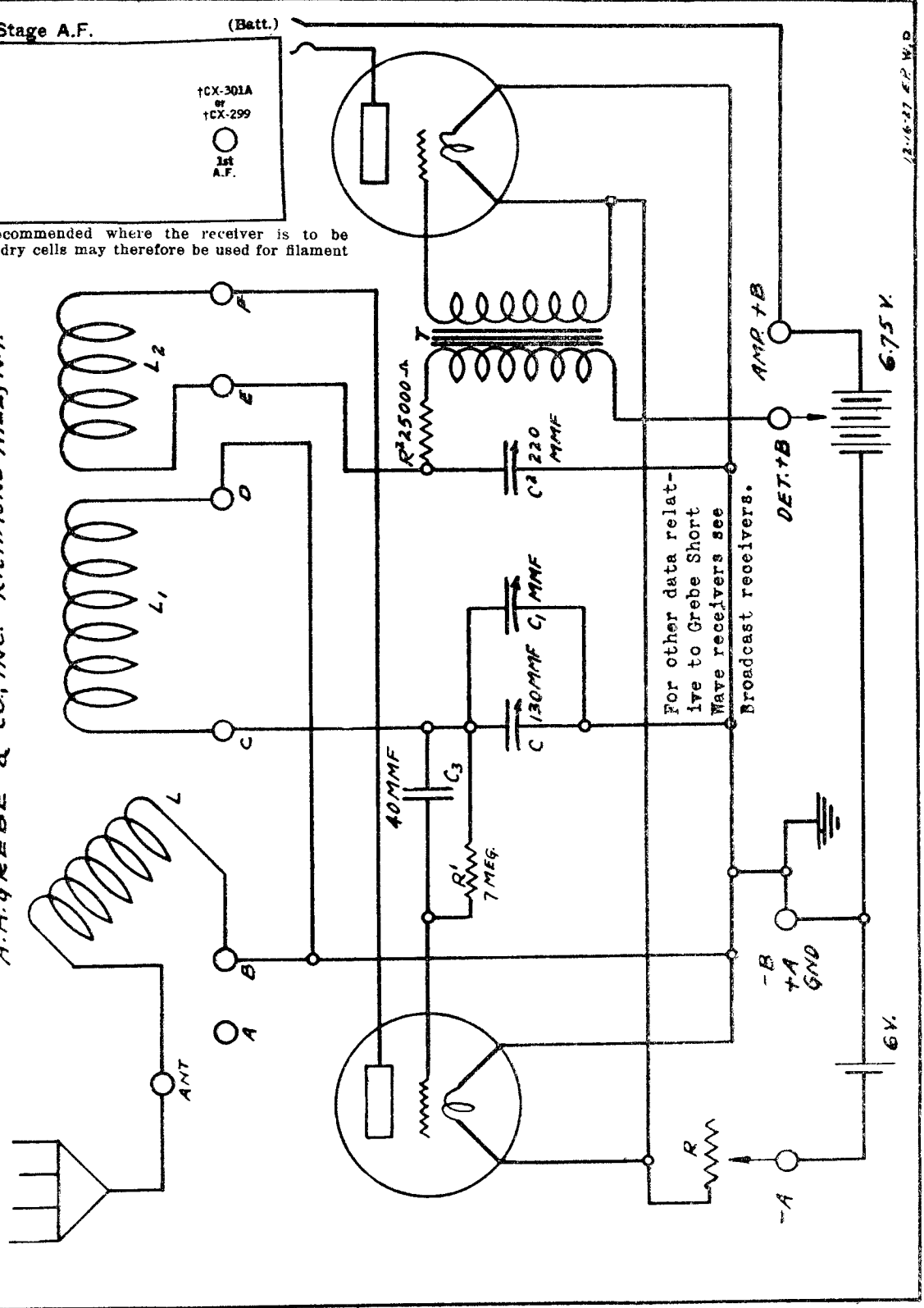
(Batt.)

1CX-301A
or
1CX-299
or
1CX-112A
DET.

1CX-301A
or
1CX-299
1st
A.F.

*CX-299 is recommended where the receiver is to be portable and dry cells may therefore be used for filament supply.

INTERNAL WIRING DIAGRAM
FOR
GREBE SHORT WAVE RECEIVER TYPE CR18
A.H. GREBE & CO., INC. RICHMOND HILL, N.Y.

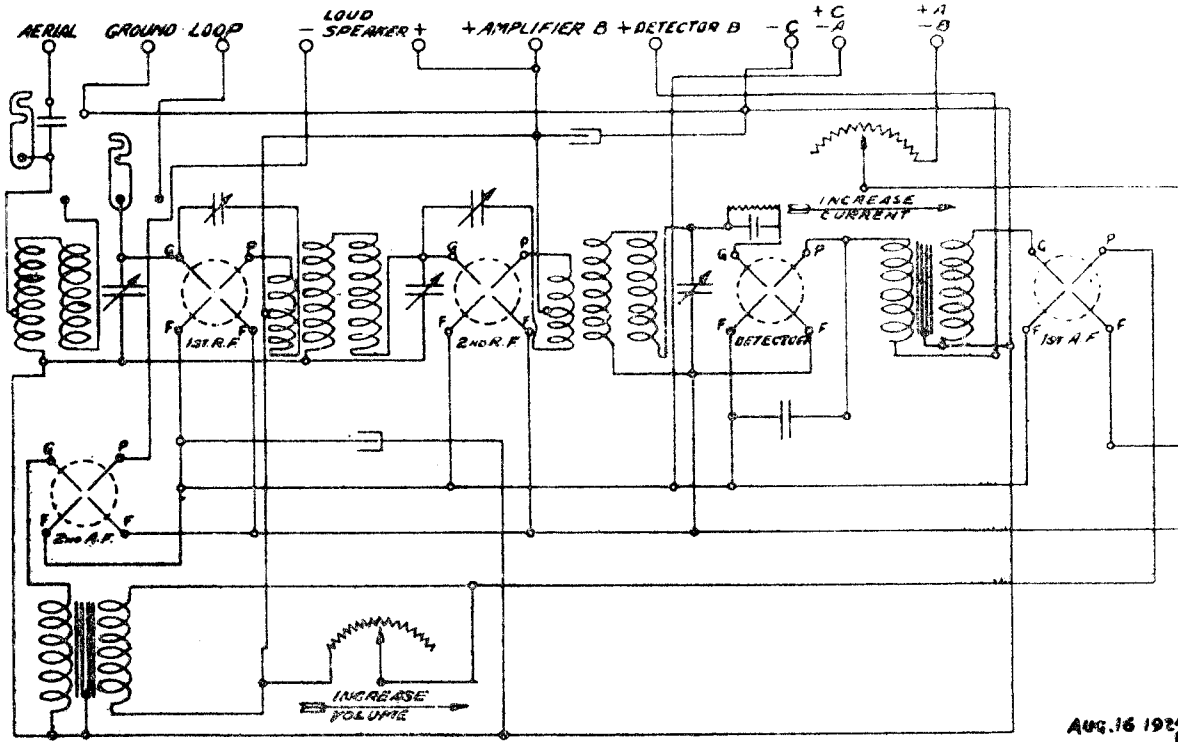


12-16-27 E.P.W.P.

MODEL Synchrophase 5
With 671 Socket Power

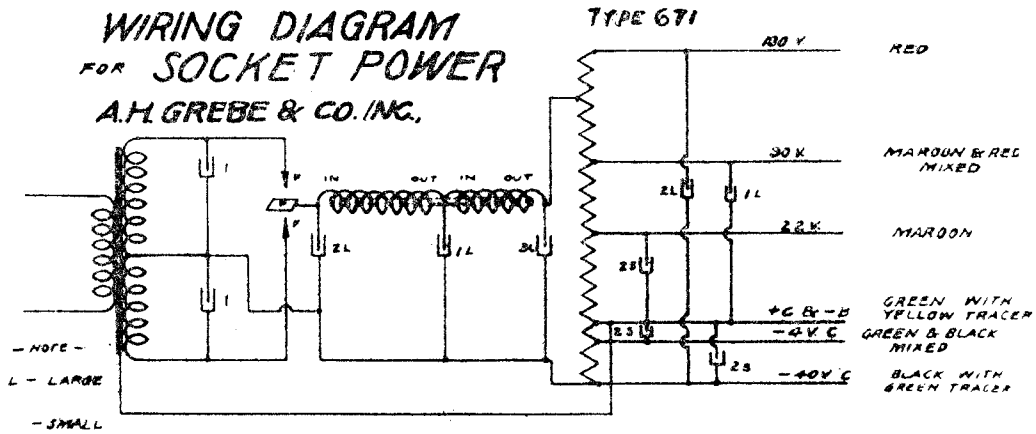
A. H. GREBE & CO.,

GREBE SYNCHROPHASE RECEIVER
A. H. GREBE & CO., INC. RICHMOND HILL, N. Y.



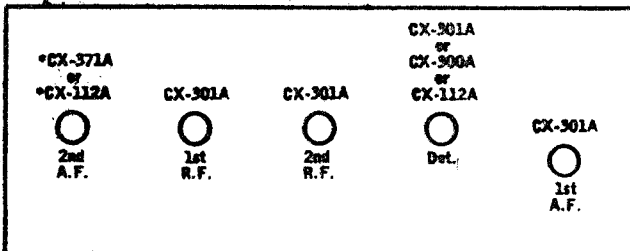
AUG. 16 1924

WIRING DIAGRAM FOR SOCKET POWER
A. H. GREBE & CO. INC.



SYNCHROPHASE "5"

(Batt.)



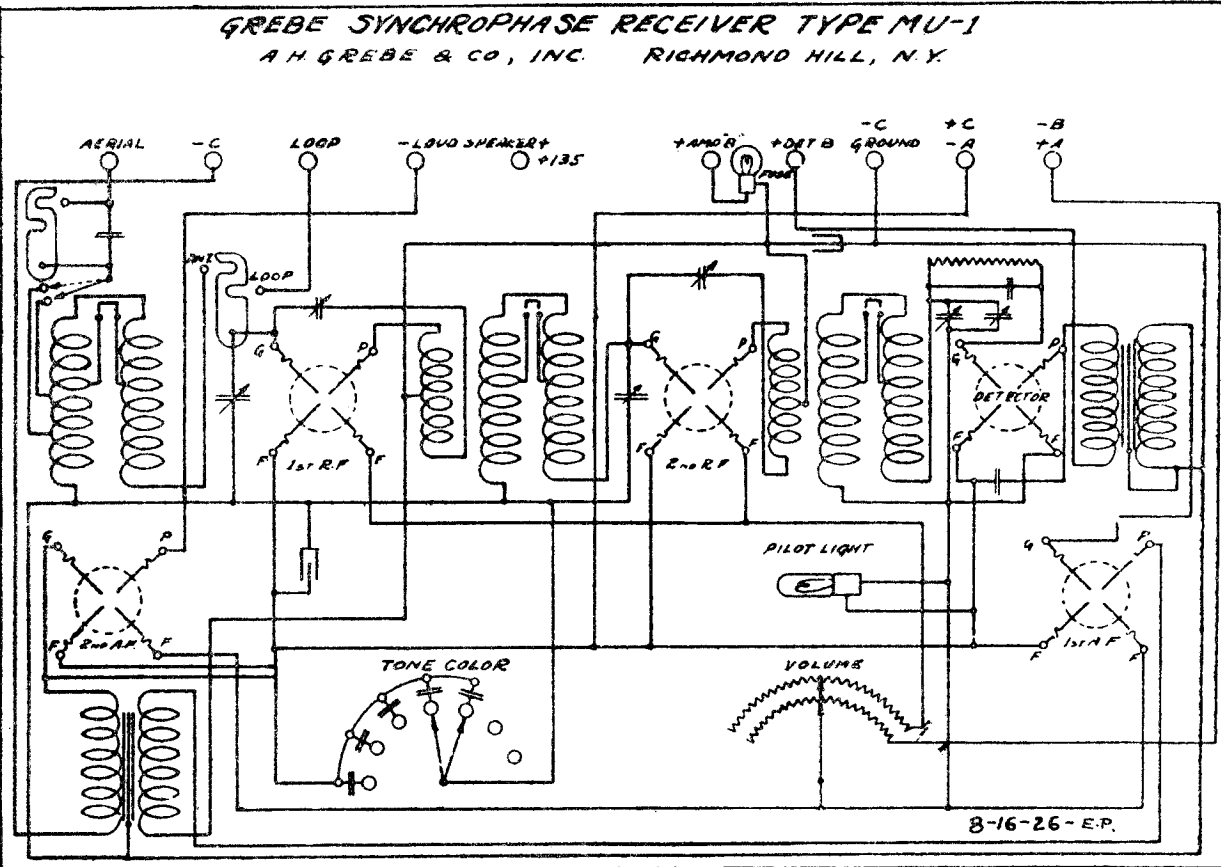
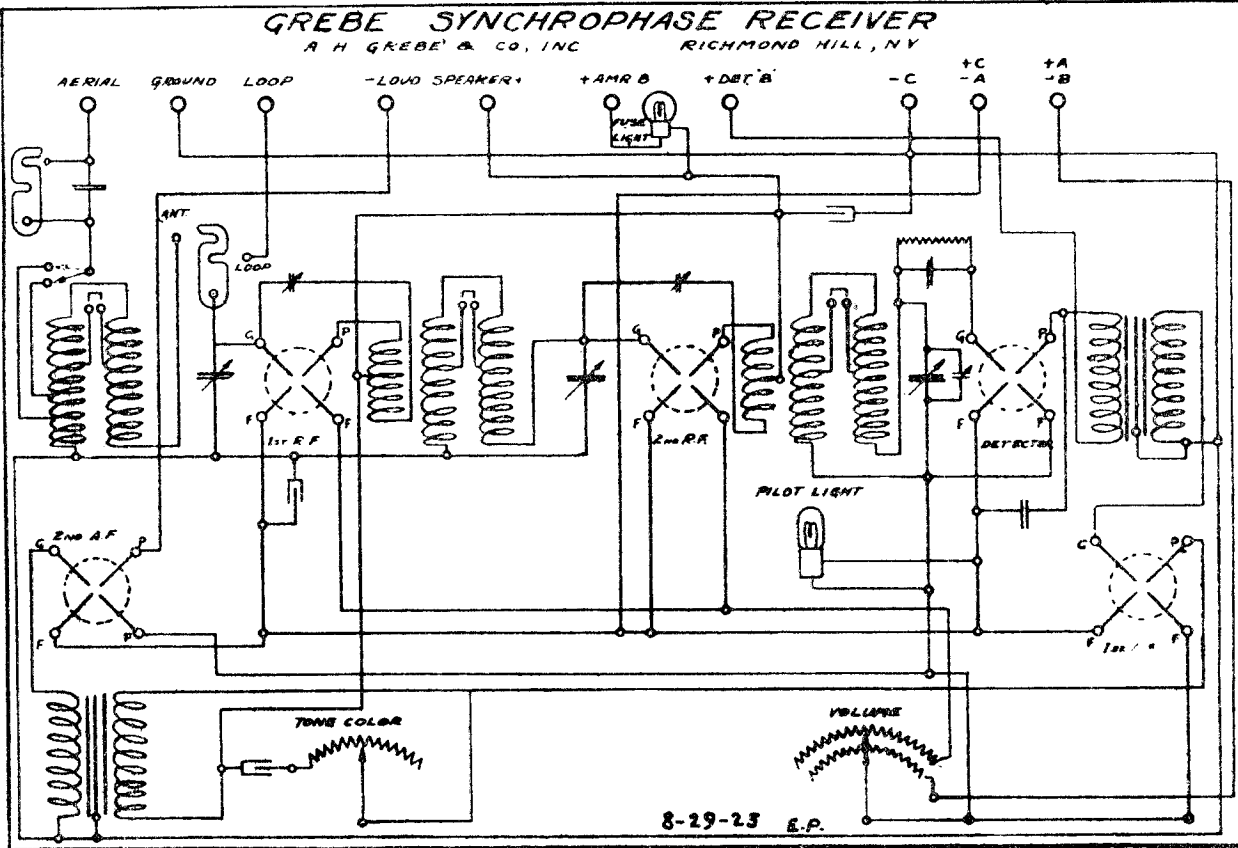
GREBE SYNCHROPHASE "5" with 671 Socket Power

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. R.F. DET. 2ND.	READINGS PLUS IN SOCKET OF SET						TUBE IN TESTER			
			TUNE OUT		TUNE IN		TUNE IN TESTER		NORMAL PLATE VOLTS	NORMAL PLATE C.A.	PLATE REL. GRID TEST	PLATE C.A. CHANGE
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS				
1	201A	1st. R.F.	6	115	5	105	0	7.0	11.0	4.0		
2	201A	2nd. R.F.	6	115	5	105	0	7.0	11.0	4.0		
3	201A	Detector	6	45	5	25	0	2.0	5.0	3.0		
4	201A	1st. A.F.	6	115	5	105	0	7.0	11.0	4.0		
5	171A	2nd. A.F.	6	200	5	180	40	20.0	20.0	6.0		

A. H. GREBE & CO., Inc.

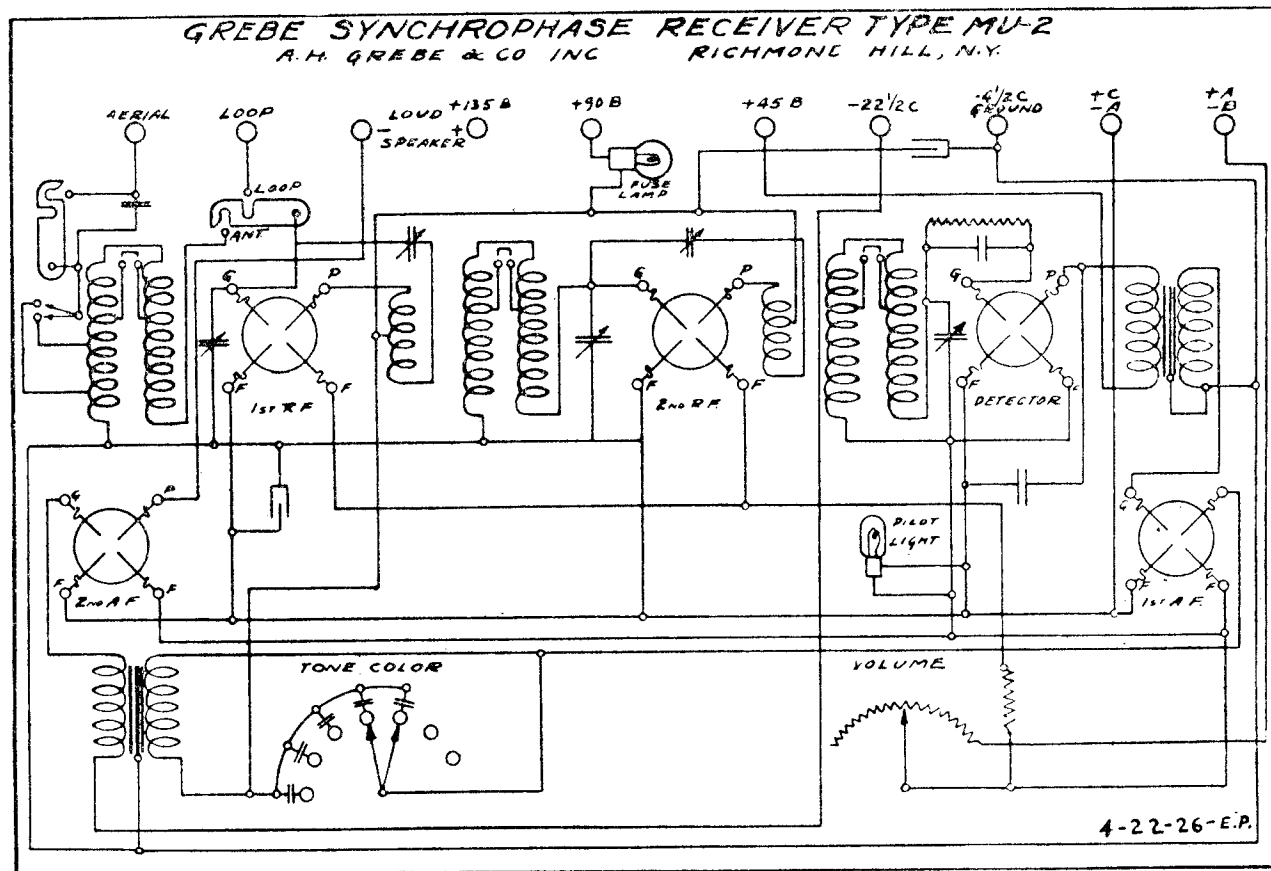
MODEL Synchrophase 1925

MODEL Synchrophase MU-1



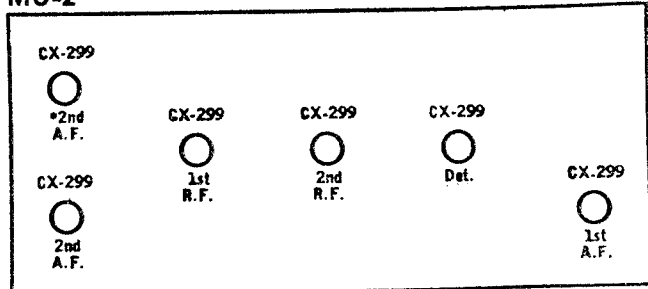
MODEL Synchrophase MU-2

A. H. GREBE & CO., Inc.



MU-2

(Batt.)



* 2nd Audio Frequency tubes are in parallel.

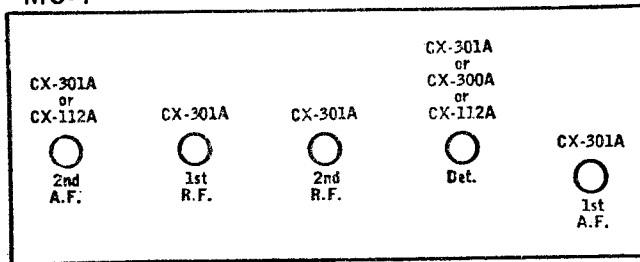
GREBE SYNCHROPHASE "5" or "MU-1"

Tube No. 5 Used in 1925 Models
 Tube No. 6 Used in Early 1927 Models
 Tube No. 7 Used in Late 1927 Models

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1st R.F. DET. ETC.)	READING, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE V.A.	PLATE M.A. @ 100V TEST	PLATE M.A. @ 200V TEST	PLATE M.A. @ 300V TEST	PLATE M.A. @ 400V TEST	
1	201A	1st. R.F.	6	100	5	90	4.5	5.0	7.5	2.5		
2	201A	2nd. R.F.	6	100	5	90	4.5	5.0	7.5	2.5		
3	201A	Detector	6	25	5	90	5.0	2.0	5.5	3.5		
4	201A	1st. A.F.	6	100	5	90	4.5	5.0	7.5	2.5		
5	201A	2nd. A.F.	6	100	5	90	4.5	5.0	7.5	2.5		
6	112	2nd. A.F.	6	150	5	135	9	9.0	13.5	4.5		
7	171A	2nd. A.F.	6	200	5	180	40	20.0	26.0	6.0		

MU-1

(Batt.)

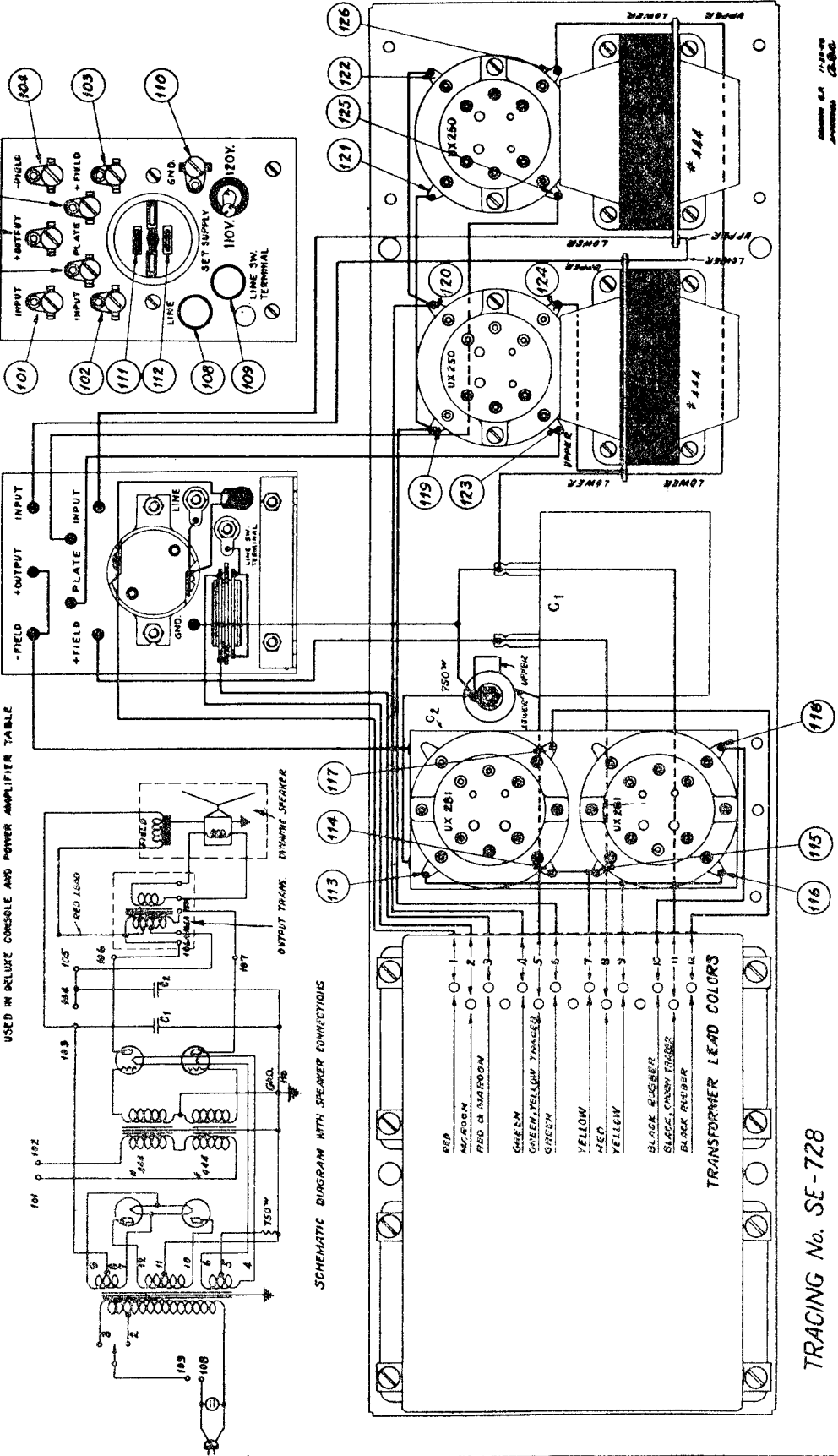


A. H. GREBE & CO., Inc.

MODEL 412
Push-Pull Amplifier

GREBE PUSH-PULL AMPLIFIER

TYPE 412
INTERNAL WIRING AND SCHEMATIC DIAGRAM
USED IN DELUXE CONSOLE AND POWER AMPLIFIER TABLE



SCHEMATIC DIAGRAM WITH SPEAKER CONNECTIONS

TRACING No. SE-728

MODEL 412
TYPE 412
A.H.G.

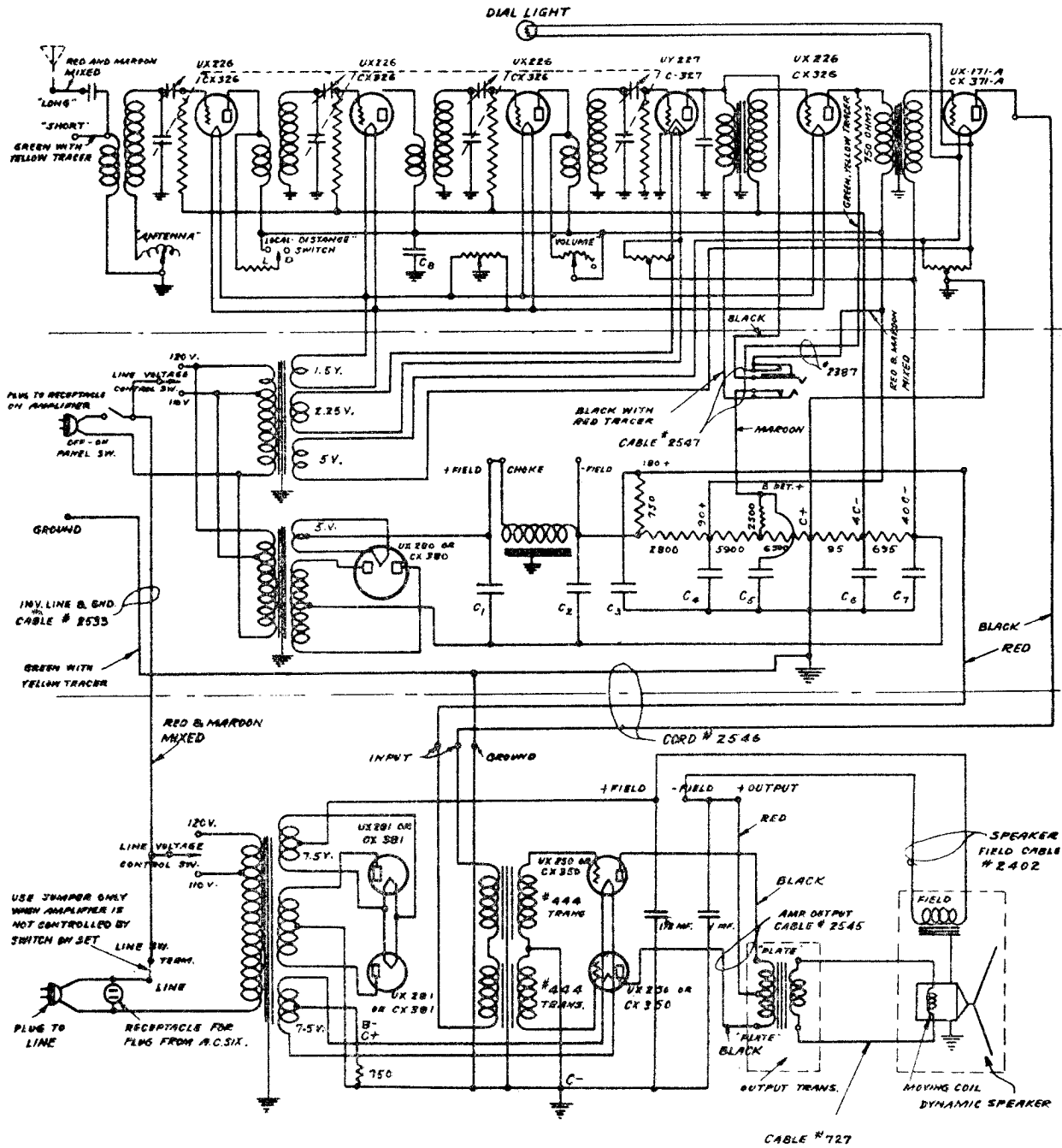
MODEL 428
DeLux Console

A. H. GREBE & CO.

WIRING DIAGRAM FOR GREBE DELUXE CONSOLE TYPE 428

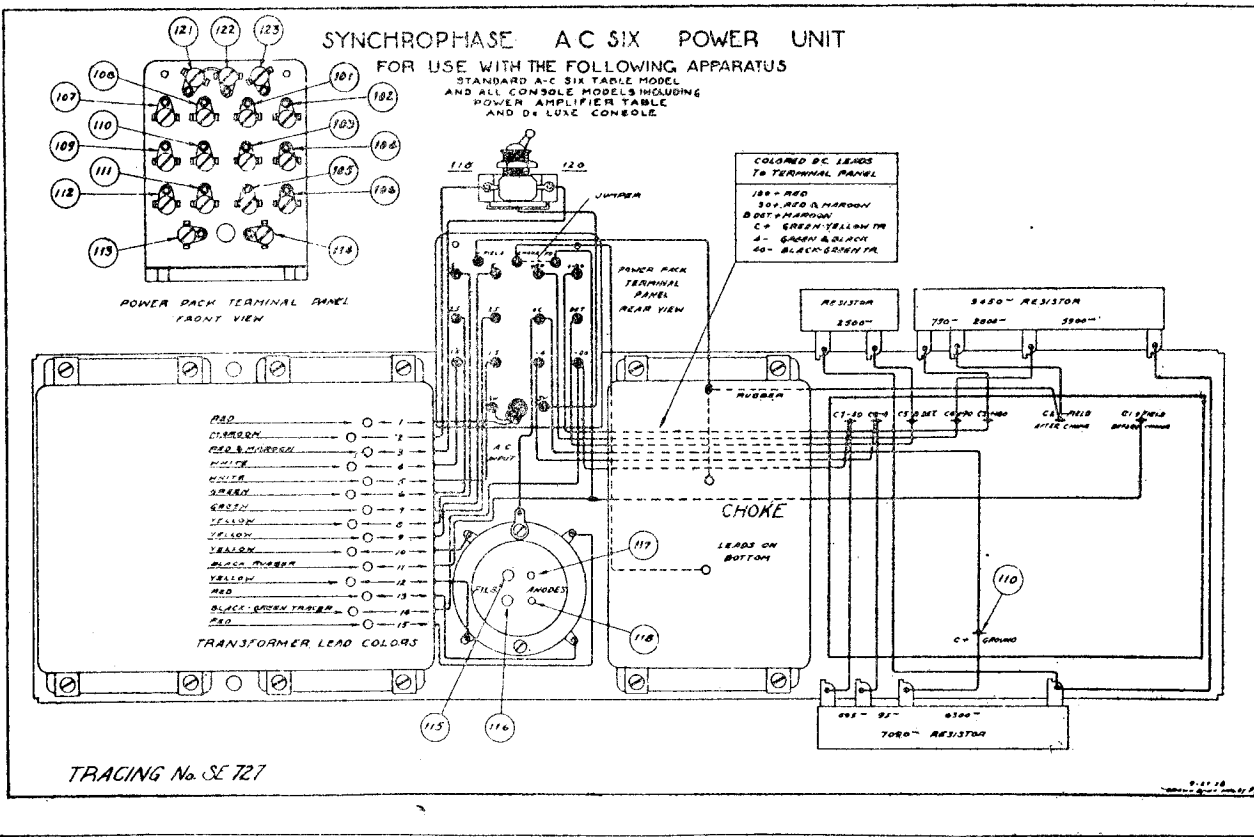
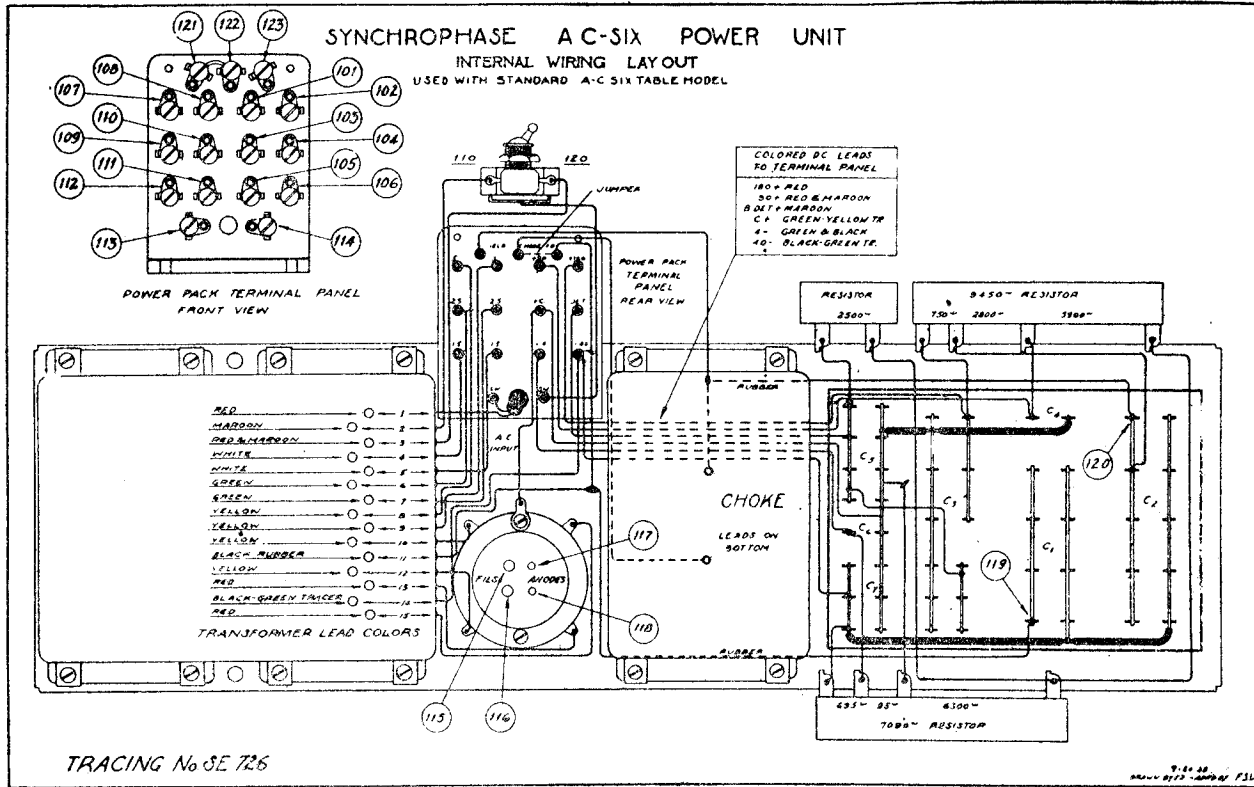
A.C. SIX RECEIVER, PUSH PULL AMPLIFIER TYPE 412
OUTPUT TRANS. TYPE 415 AND DYNAMIC SPEAKER TYPE 400

A.H.GREBE & CO., INC.
RICHMOND HILL, N.Y.



**MODEL Synchrophase AC-6
Power Unit
Chassis
Two Types**

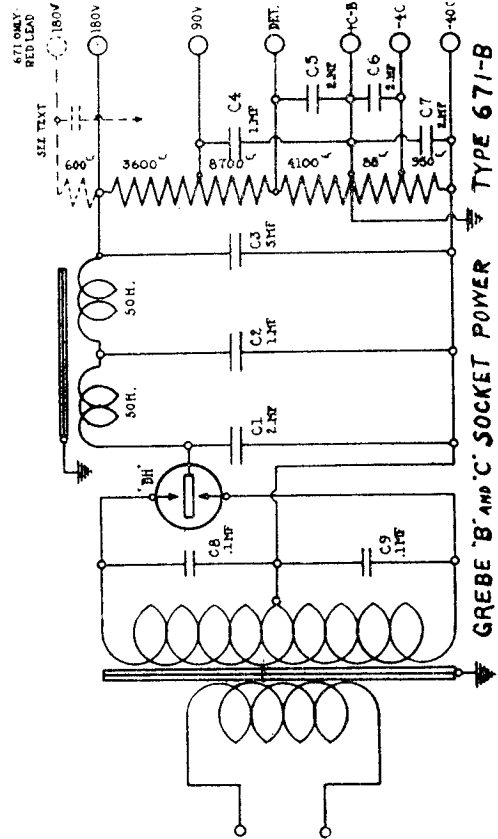
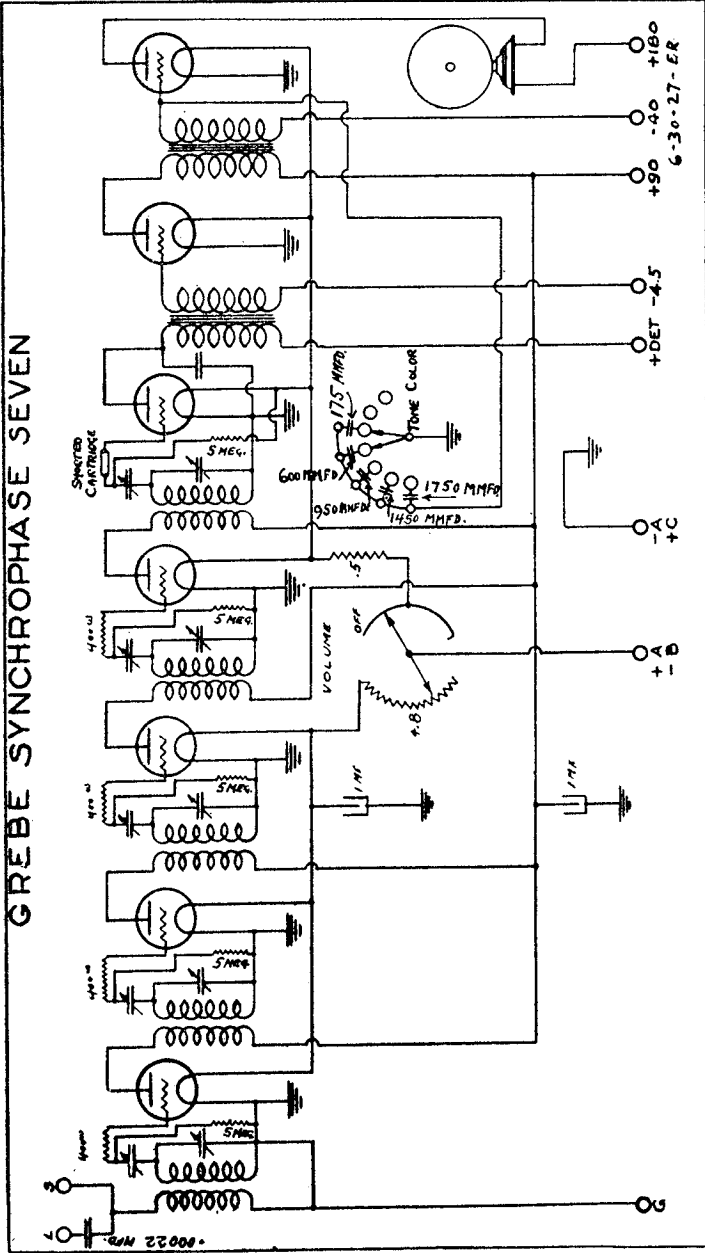
A. H. GREBE & CO., Inc.



A. H. GREBE & CO.

MODEL Synchrophase 7
Battery Type
Socket Power Unit 671-B

GREBE SYNCHROPHASE SEVEN



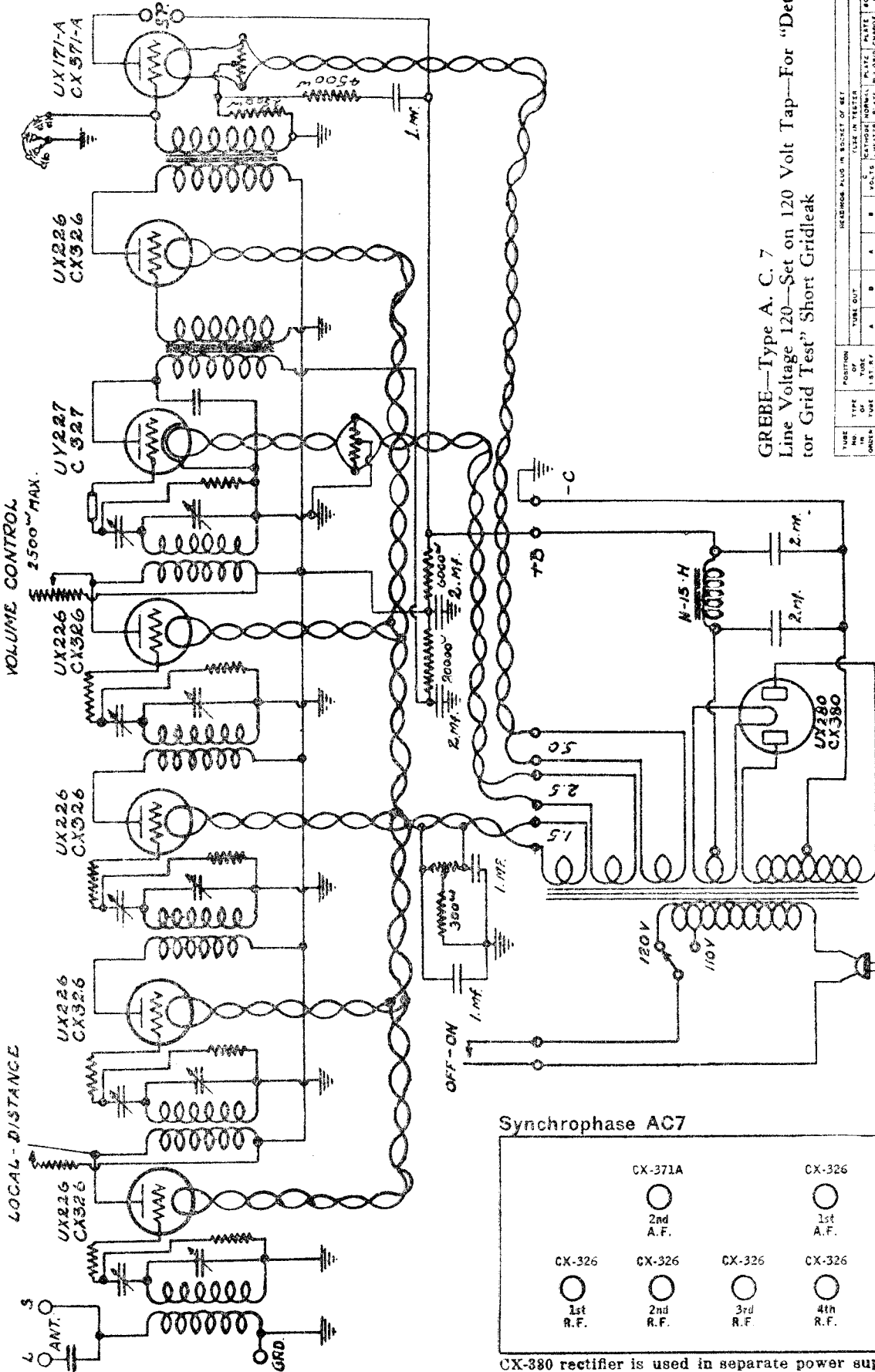
(Batt.)

Synchrophase 7

•CX-371A or •CX-112A 2nd A.F.	○ CX-301A 1st A.F.	○ CX-301A 2nd R.F.	○ CX-301A 3rd R.F.	○ CX-301A 4th R.F.	○ CX-301A or CX-300A or CX-112A Det.
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MODEL Synchrophase 7
Schematic

A. H. GREBE & CO.

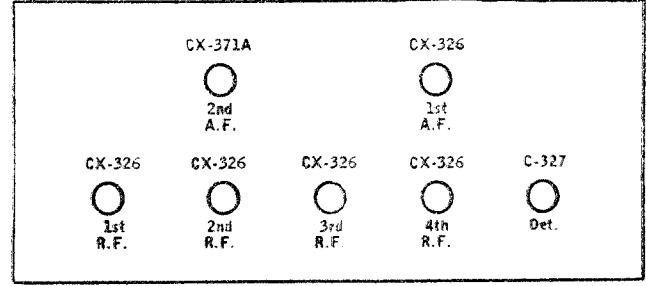


GREBE—Type A. C. 7
Line Voltage 120—Set on 120 Volt Tap—For "Detector Grid Test" Short Gridleak

TUBE NO.	TYPE OF TUBE	POSITION	TUBE OUT		TUBE IN		TUBE IN TESTS		PARTS	SCREEN
			1st AF	2nd AF	1st AF	2nd AF	1st AF	2nd AF		
226	1st AF	1.5	105	1.4	100	1.4	100	7.8	7.8	0
226	2nd AF	1.5	105	1.4	100	1.4	100	7.8	7.8	0
226	3rd AF	1.5	105	1.4	100	1.4	100	7.8	7.8	0
226	4th AF	1.5	105	1.4	100	1.4	100	7.8	7.8	0
227	1st AF	2.5	100	8.5	40	0	0	2.8	3.6	8
226	1st AF	1.5	105	1.4	100	1.4	100	4.0	9.2	6.2
371A	5th AF	5.7	280	6.2	200	40.0	0	20.0	25.0	5.0
380	Rect.	-	-	5.2	-	-	-	9.0	-	-

SYNCHROPHASE SEVEN A. C. RECEIVER

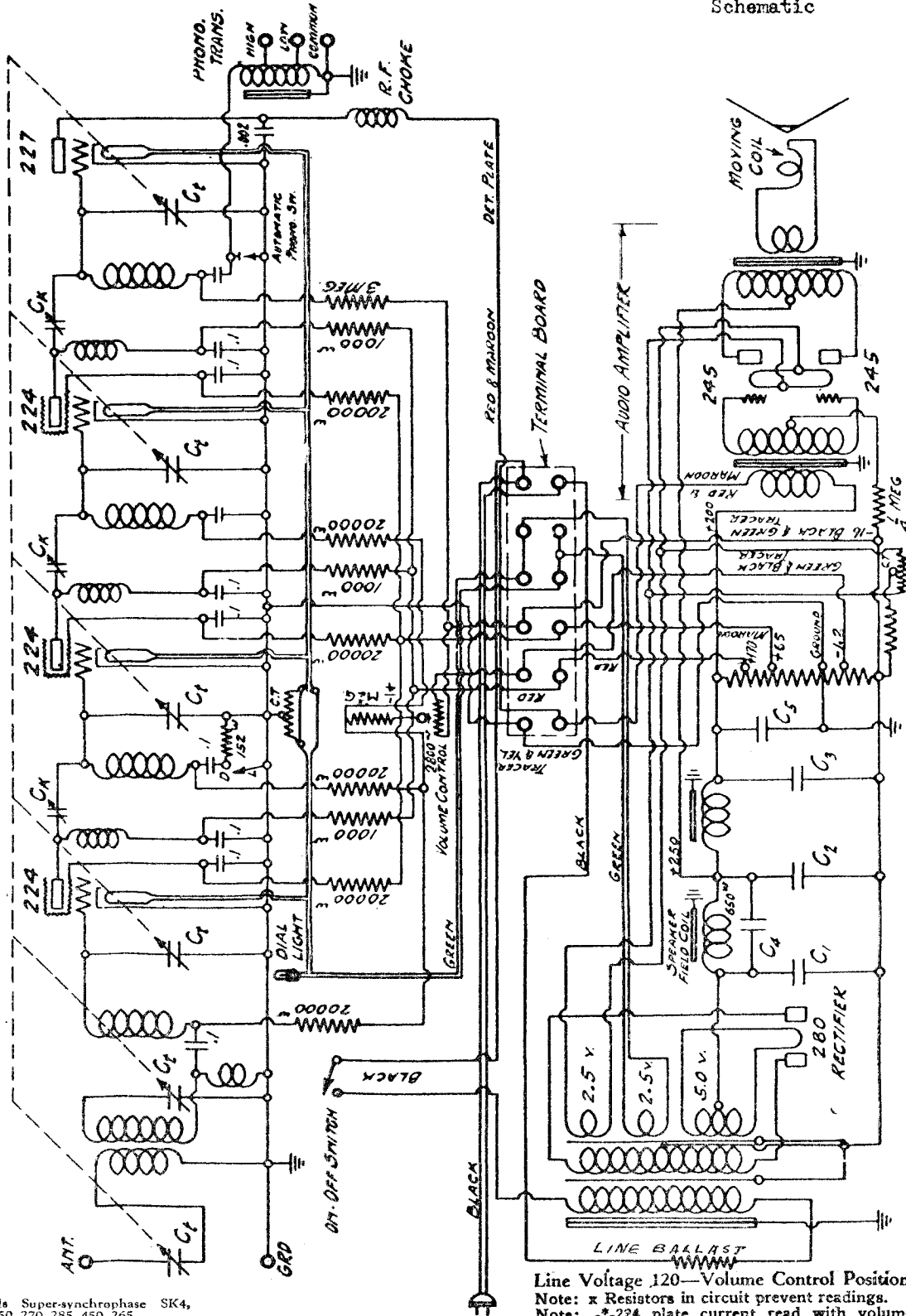
Synchrophase AC7



CX-380 rectifier is used in separate power supply unit.

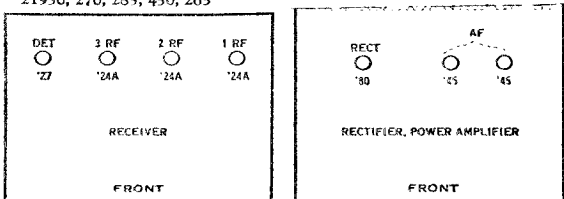
A. H. GREBE & CO.

MODEL Synchrophase SK-4
Early Model
Schematic



GREBE SYNCHROPHASE SK-4 Early Model

Models Super-synchrophase SK4,
21950, 270, 285, 450, 265

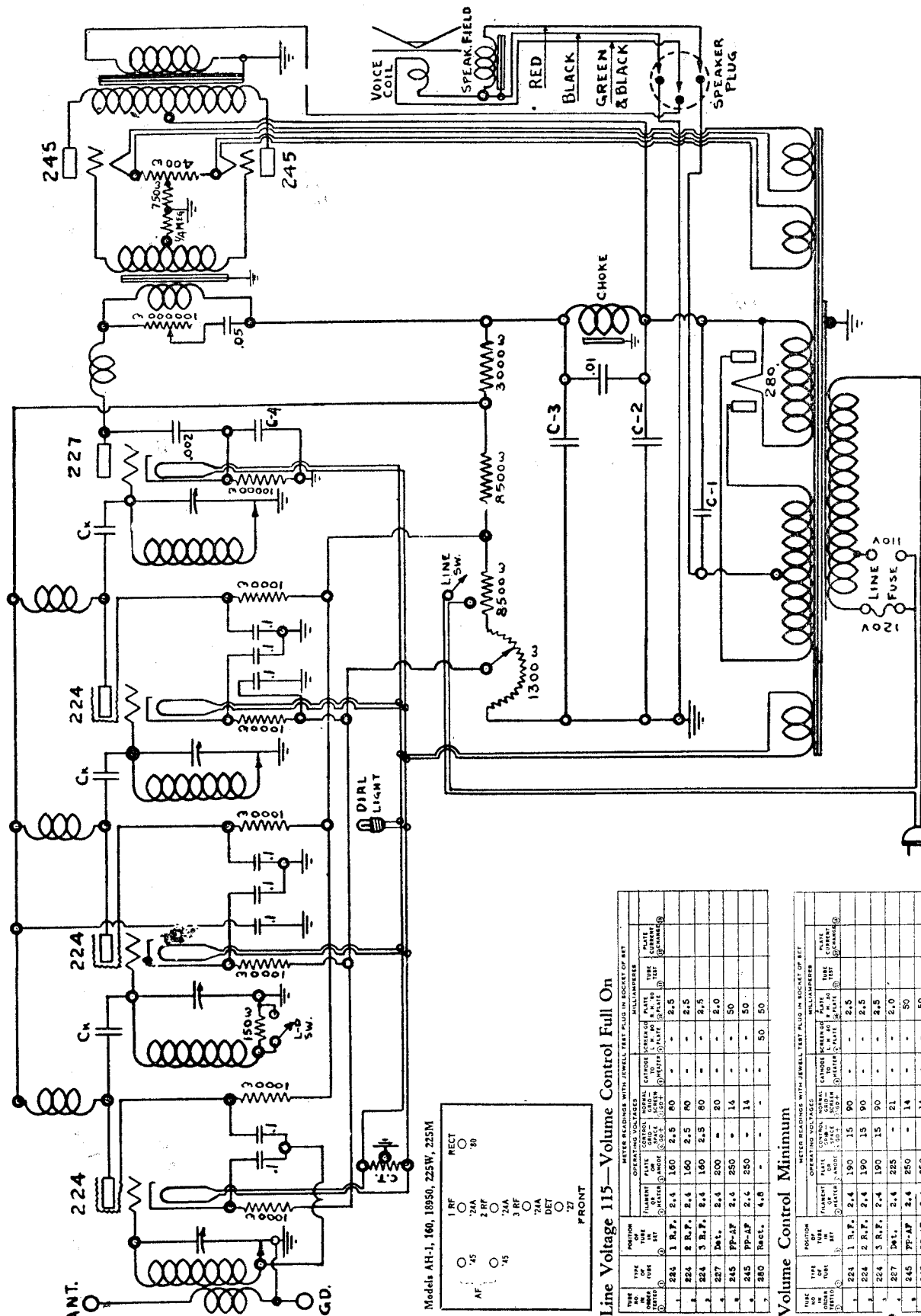


Line Voltage 120—Volume Control Position Min.*
Note: x Resistors in circuit prevent readings.
Note: -*224 plate current read with volume control at maximum position.

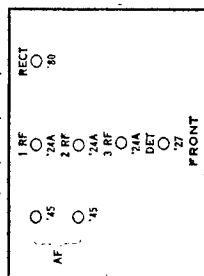
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT				TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	CATHODE HEATER VOLTS	NORMAL PLATE VOLTS	PLATE CHANGE VOLTS	PLATE CHG. W/A	SCREEN GRID VOLTS	
224	1st RF	2.7	195	2.35	180	14	-	0	2	2	57	
224	2nd RF	2.7	195	2.35	188	14	-	0	2	2	57	
224	3rd RF	2.7	195	2.35	168	14	-	0	2	2	57	
227	Det.	2.7	195	2.35	210	x	-	.8	.8	0	-	
245	1st AF	2.7	270	2.35	245	x	-	30	34	4	-	
245	2nd AF	2.7	270	2.35	245	x	-	30	34	4	-	
280	Rect.	7	-	5.2	-	x	-	90	-	-	-	

MODEL AH-1
Schematic

A. H. GREBE & CO.



Models AH-1, 160, 18950, 225W, 225M



Line Voltage 115—Volume Control Full On

TUNE NO.	TYPE OF TUBE	POSITION OF SET	METER READINGS WITH JEWELL TEST PUMP IN SOCKET OF SET			MILLIAMPERES		
			PLATE CURRENT	GRID CURRENT	SPACE CURRENT	PLATE CURRENT	GRID CURRENT	SPACE CURRENT
1	224	1 R.F.	2.4	1.60	2.5	80	-	2.5
2	224	2 R.F.	2.4	1.60	2.5	80	-	2.5
3	224	3 R.F.	2.4	1.60	2.5	80	-	2.5
4	227	DET.	2.4	2.00	-	20	-	2.0
5	245	PP-1F	2.4	250	-	14	-	50
6	245	PP-2F	2.4	250	-	14	-	50
7	280	RECT.	4.0	-	-	-	50	50

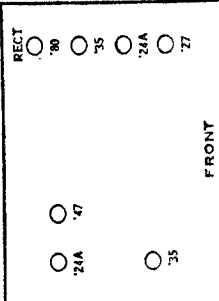
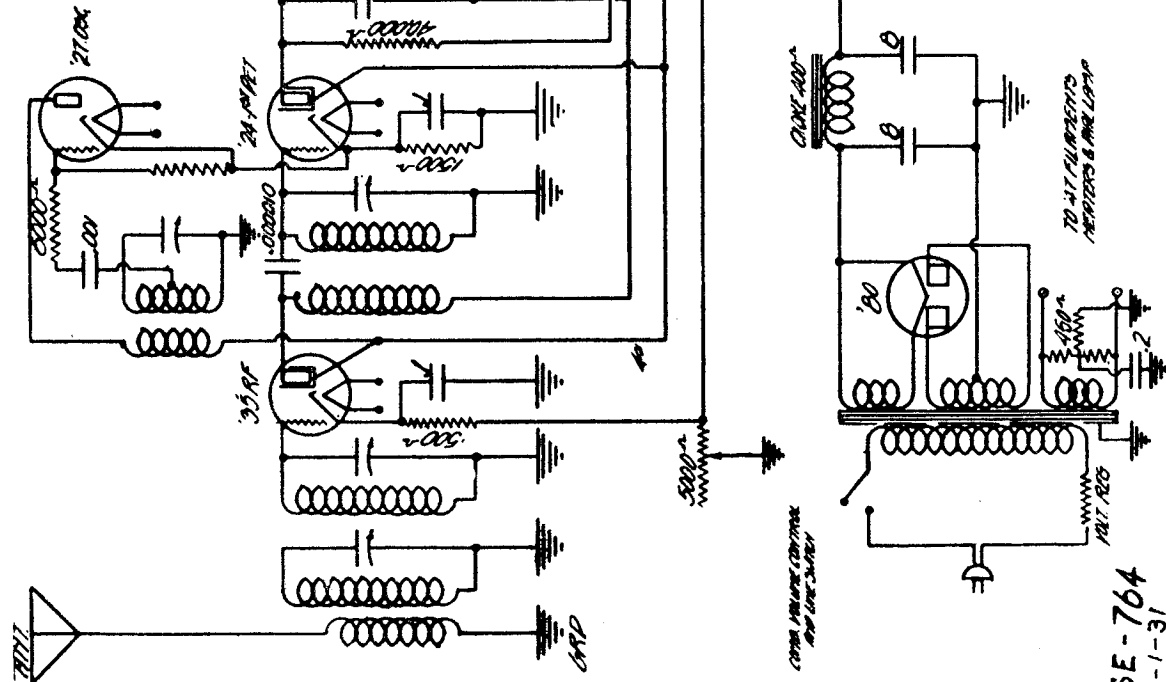
Volume Control Minimum

TUNE NO.	TYPE OF TUBE	POSITION OF SET	METER READINGS WITH JEWELL TEST PUMP IN SOCKET OF SET			MILLIAMPERES		
			PLATE CURRENT	GRID CURRENT	SPACE CURRENT	PLATE CURRENT	GRID CURRENT	SPACE CURRENT
1	224	1 R.F.	2.4	1.90	1.5	90	-	2.5
2	224	2 R.F.	2.4	1.90	1.5	90	-	2.5
3	224	3 R.F.	2.4	1.90	1.5	90	-	2.5
4	227	DET.	2.4	2.25	-	21	-	2.0
5	245	PP-1F	2.4	250	-	14	-	50
6	245	PP-2F	2.4	250	-	14	-	50
7	280	RECT.	4.0	-	-	-	50	50

A. H. GREBE & CO.

MODEL HS-4
1 Pentode

Model HS-4, Models I, 2 Pentode



IF PEAK 175 KC

Tube	Plt.	K	Sor.
File	255.	50.	128.
RF	130.	11.5	-
Osc.	255.	11.5	128.
1st D	255.	50.	128.
IF	255.	50.	128.
2nd D	130.	10.	128.
Pent	235.	-	255.
Rect	4.8	-	-

Line voltage 115. V.C. Min.

All readings to ground.
Line voltage 115. V.C. Min.

SE-764
6-1-31

MODEL HS-4
With 45 P.P.

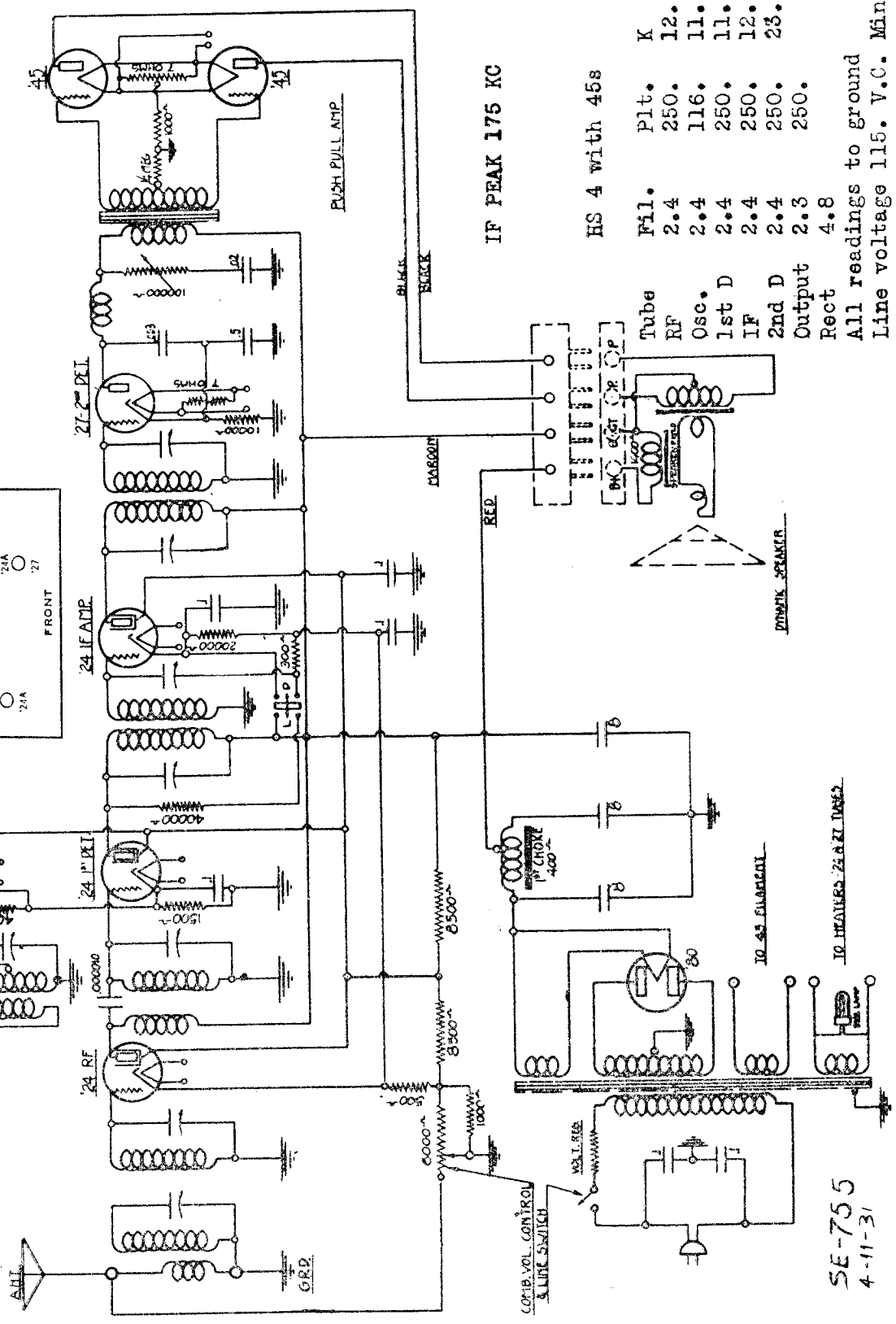
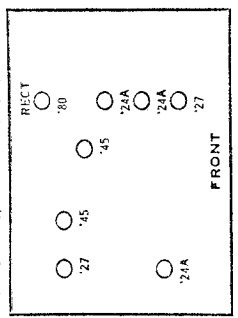
A. H. GREBE & CO.

K	12.	116.
Plt.	250.	116.
1st D	250.	116.
2nd D	250.	116.
Output	250.	23.
Rect	4.8	

HS 4 with 45s	
File.	2.4
Osc.	2.4
1st D	2.4
IF	2.4
2nd D	2.4
Output	2.3
Rect	4.8

All readings to ground
Line voltage 115. V.C. Min.

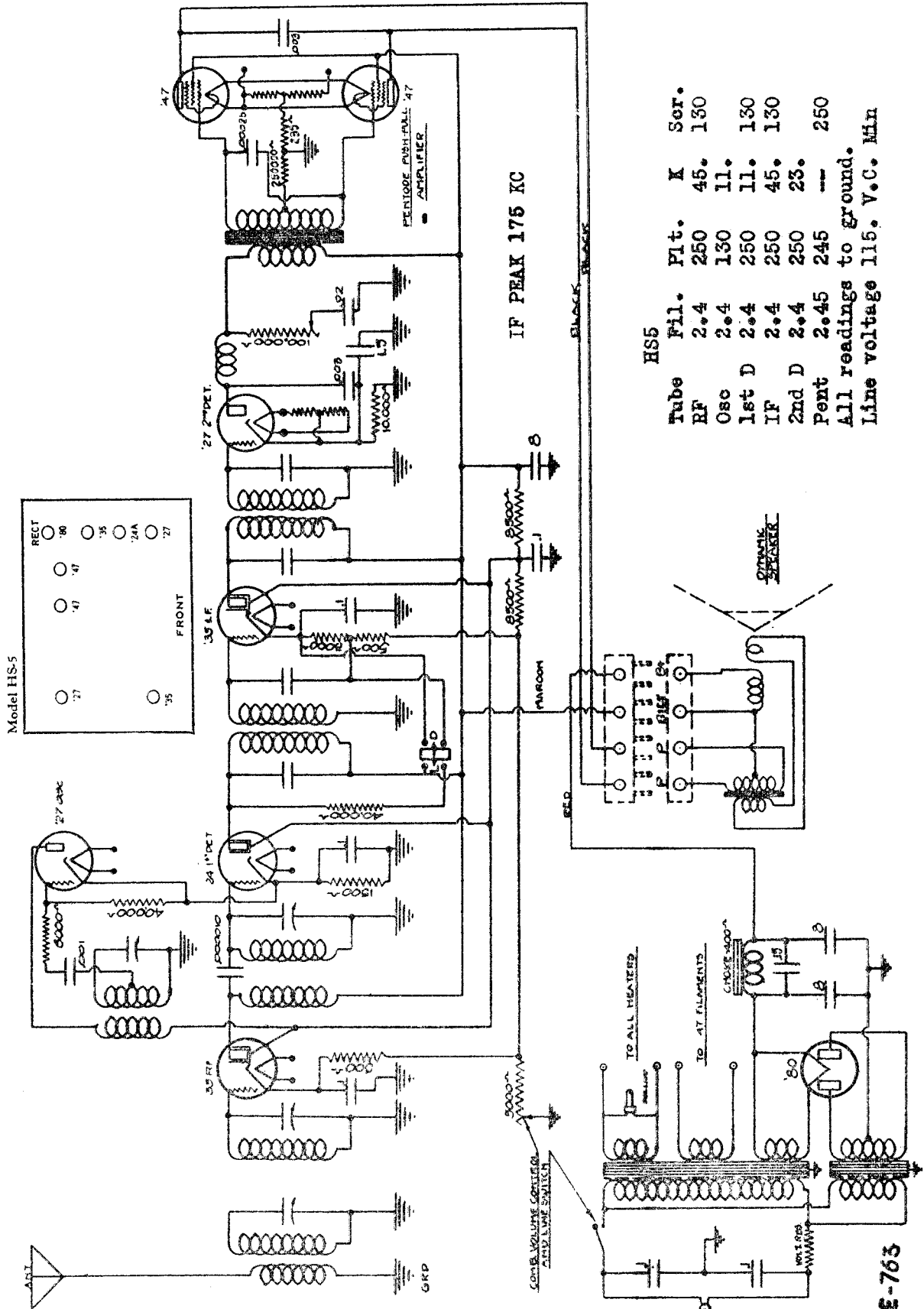
Model HS-4, Models 1, 2, 3, 4



SE-755
4-11-31

MODEL HS-5

A. H. GREBE & CO.



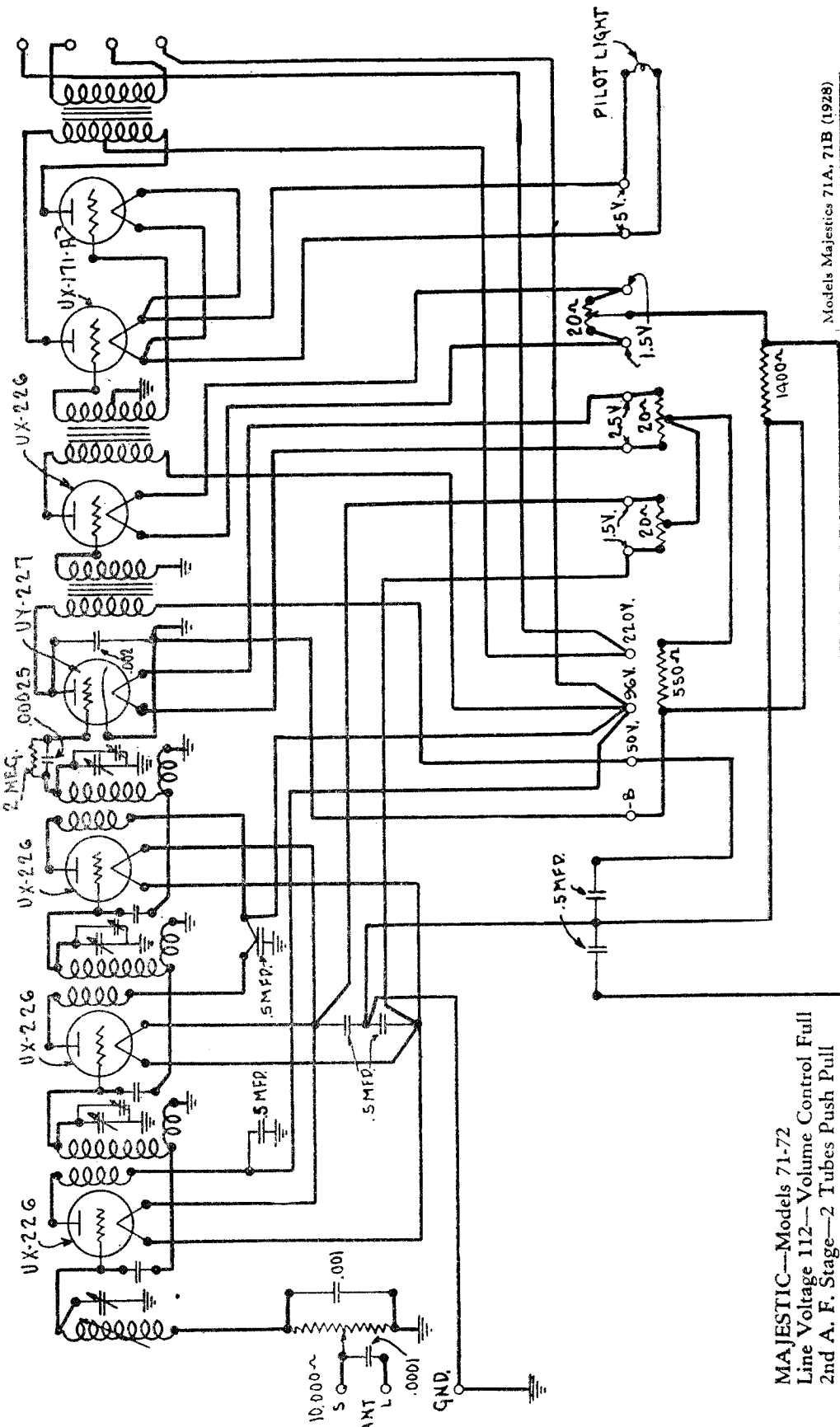
HS5		Tube	File.	Plt.	K	Ser.
		RF	2.4	250	45.	130
		Osc	2.4	130	11.	130
		1st D	2.4	250	11.	130
		2nd D	2.4	250	45.	130
		Pent	2.45	250	23.	250

All readings to ground.
Line voltage 115. V.C. Min

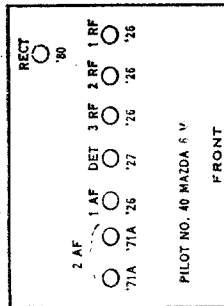
SE-763

GRIGSBY - GRUNOW CO.

MODEL 70
Chassis



Models Majestics 71A, 71B (1928)



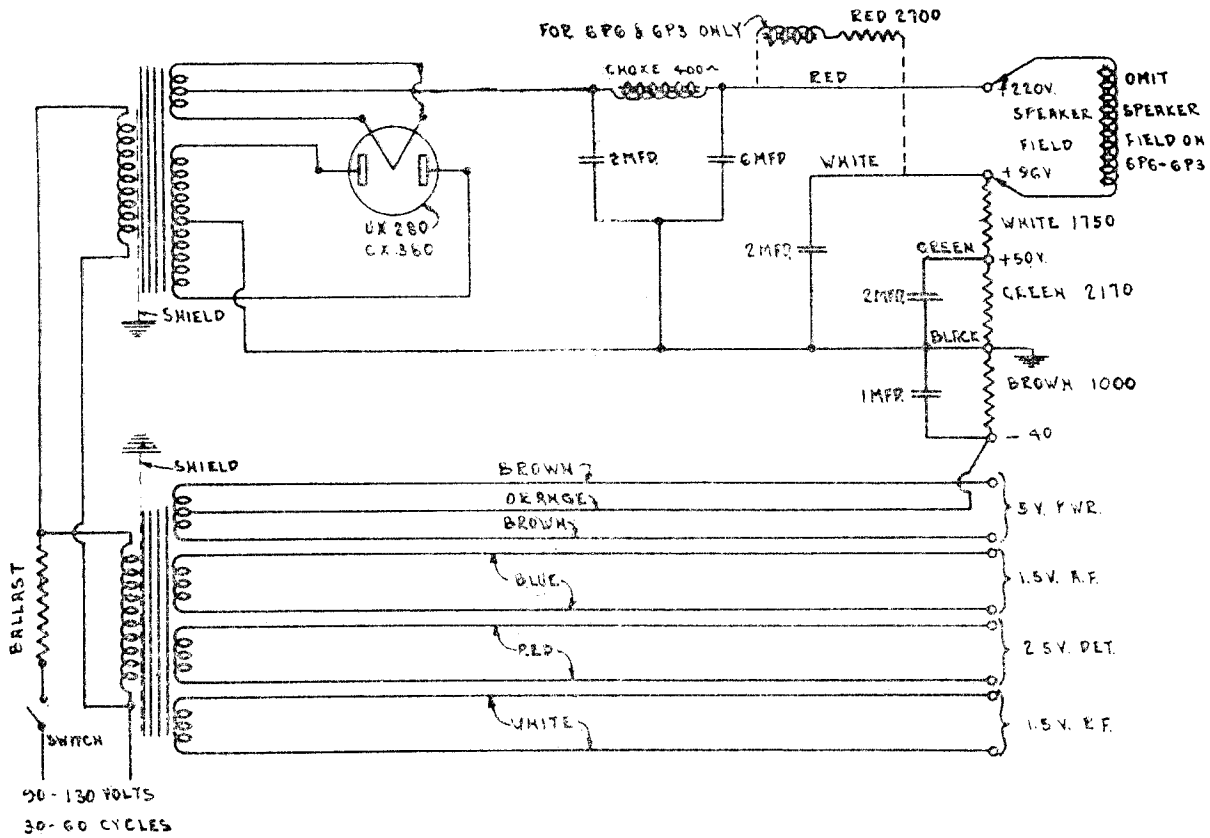
MAJESTIC—Models 71-72
Line Voltage 112—Volume Control Full
2nd A. F. Stage—2 Tubes Push Pull

TUBE NO.	TYPE OF TUBE	POSITION OF TUBE	TUBE IN TESTER				GRABBER PLUG IN SOCKET OF SET			
			TUNE OUT VOLTS	ANT. VOLTS	CATHODE VOLTS	NORMAL PLATE VOLTS	PLATE M.A.	PLATE TEST CHARGE		
1	226	1st. R.F.	1.5	102	1.4	96	5	3.5	8.5	5.0
2	226	2nd. R.F.	1.5	102	1.4	96	5	3.5	8.5	5.0
3	226	3rd. R.F.	1.5	102	1.4	56	5	3.5	8.5	5.0
4	227	Detector	2.4	100	2.2	40	0	3.0	3.0	0
5	226	1st. A.F.	1.5	100	1.4	63	4	3.5	8.0	4.5
6	171A	2nd. A.F.	5.0	192	4.8	180	40	20.0	23.0	3.0
7	171A	2nd. A.F.	5.0	192	4.8	180	40	20.0	23.0	3.0
8	260	Rectifier						5.8		

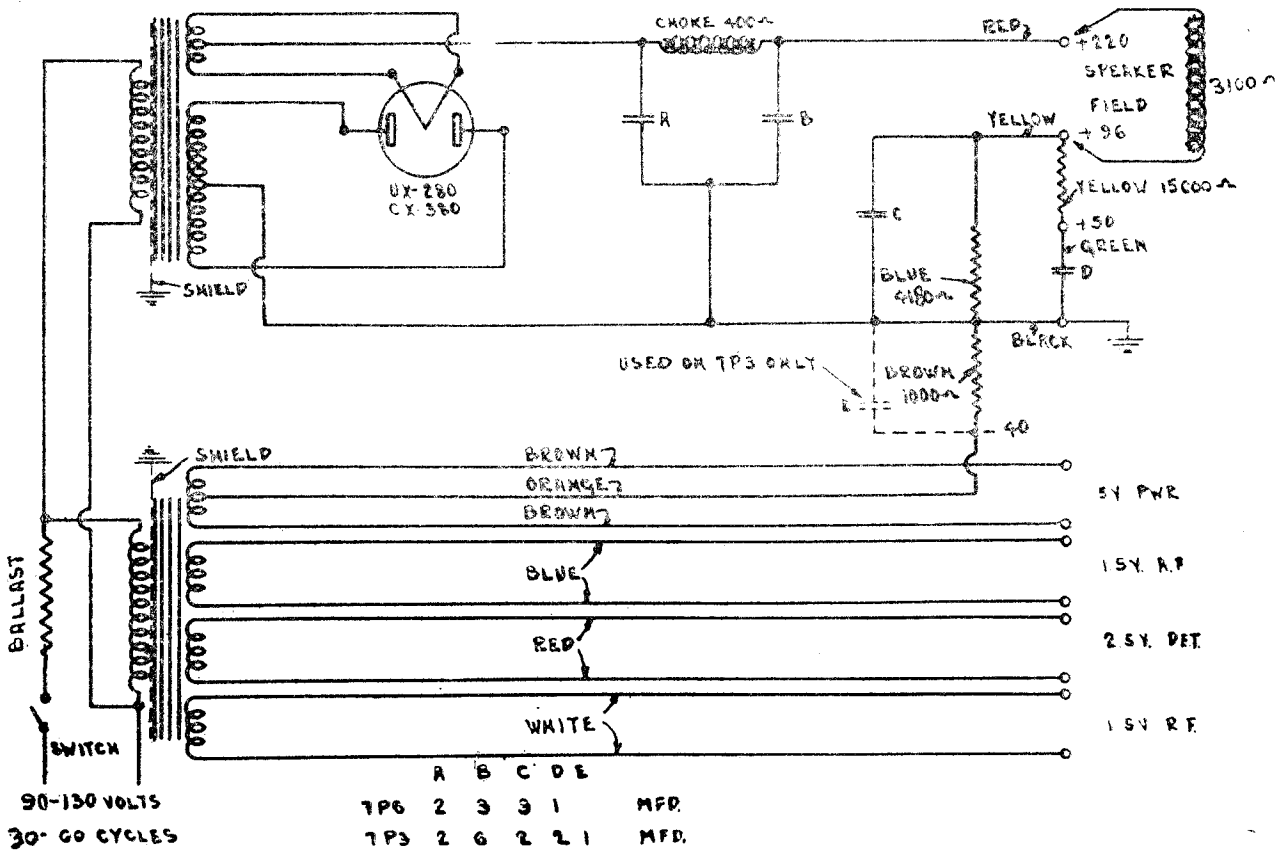
MODEL 7-P-6, 7-P-3
Two Types

GRIGSBY - GRUNOW CO.

SCHEMATIC DIAGRAM OF 7P6-7P3 POWER PACK (OLD VIKING)



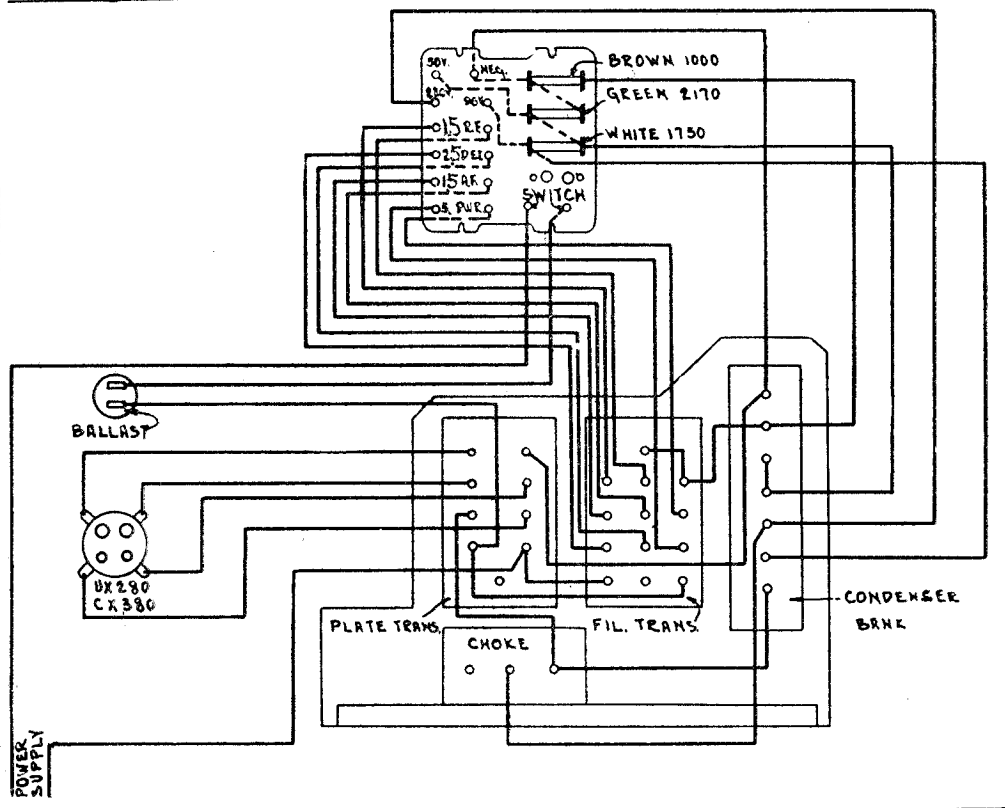
SCHEMATIC DIAGRAM OF 7P6-7P3 POWER PACK



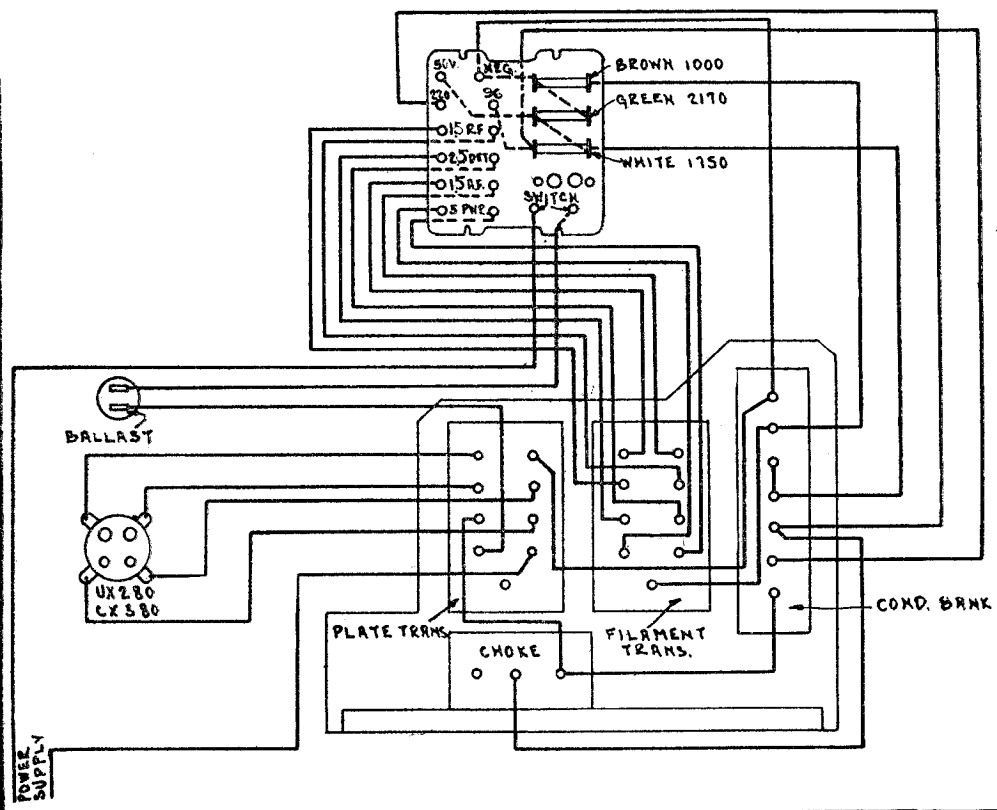
GRIGSBY - GRUNOW CO.

MODEL 7-P-6, 7-P-3
Wiring Diagram
Old Wiring

WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P6 (OLD WIRING)



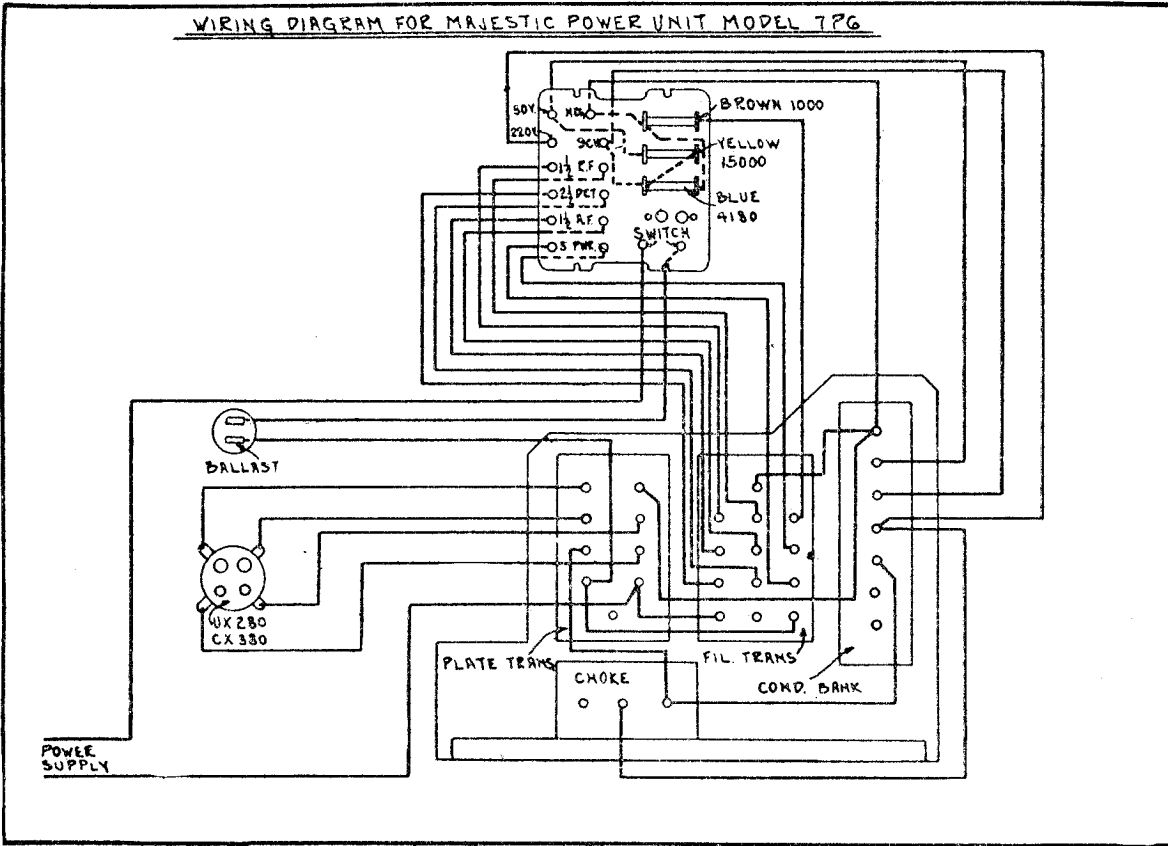
WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P3 (OLD WIRING)



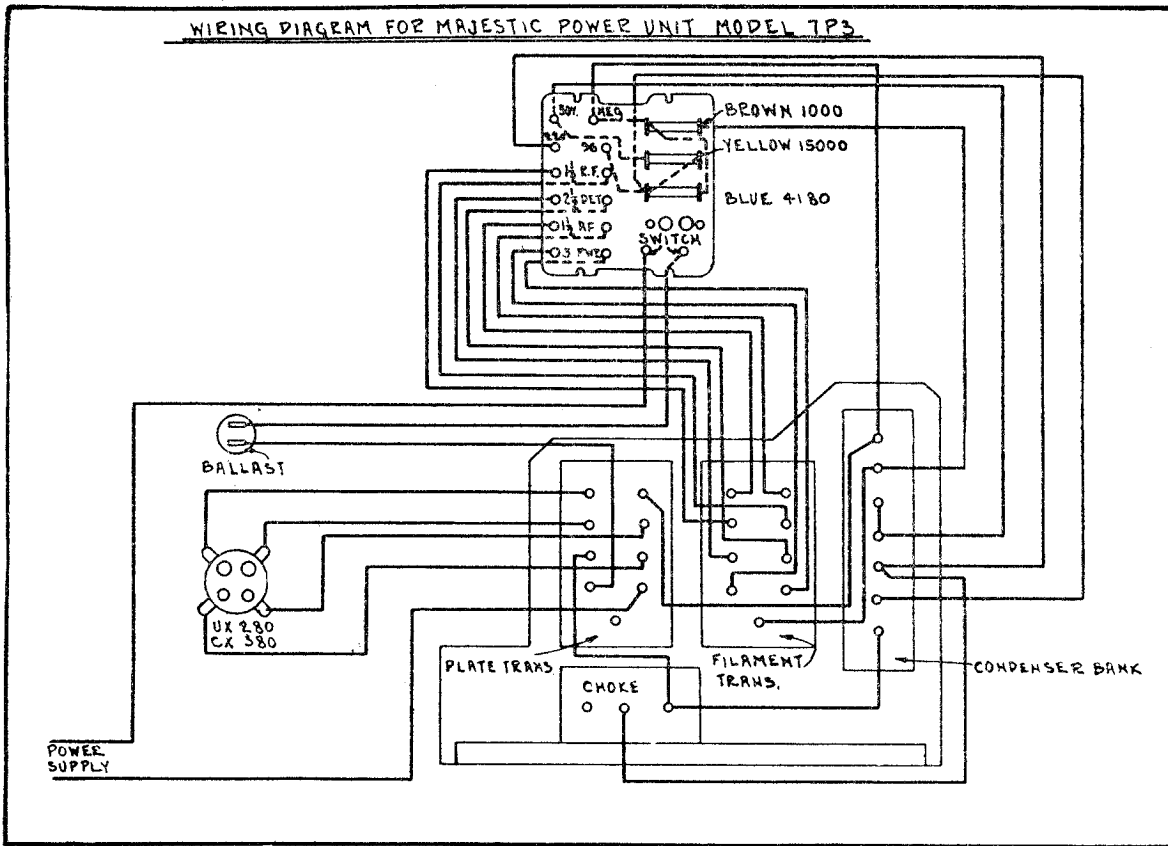
MODEL 7-P-6,7-P-3
Wiring Diagram

GRIGSBY - GRUNOW CO.

WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P6



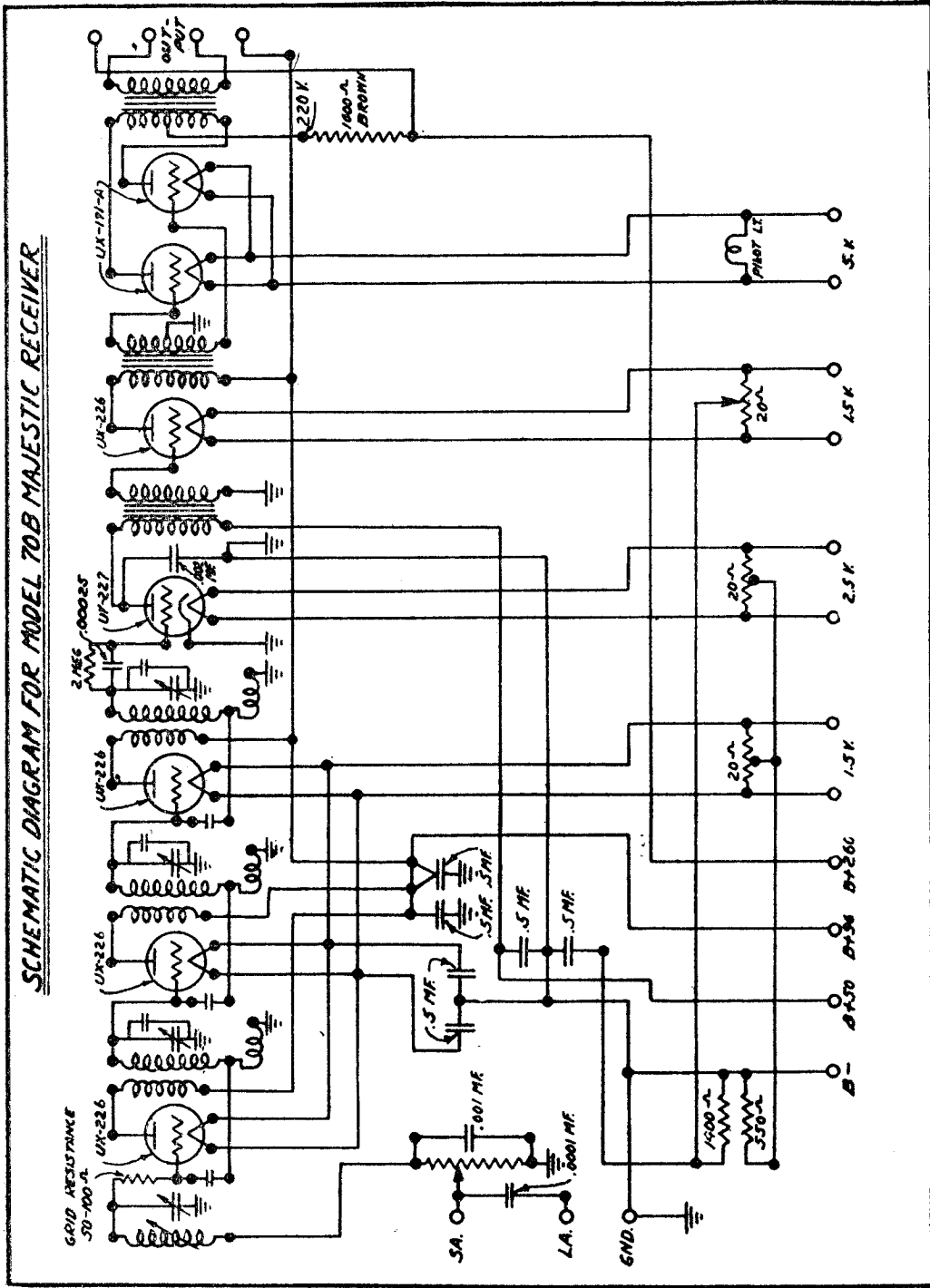
WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P3



GRIGSBY - GRUNOW CO.

MODEL 70-B

SCHEMATIC DIAGRAM FOR MODEL 70B MAJESTIC RECEIVER



Line Voltage 112—Volume Control Full
2nd A. F. Stage—2 Tubes Push Pull

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	READING PLUG IN SOCKET BY KEY						TUBE IN TESTER		
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. CHANGING	PLATE M.A. CHANGING
226	UX-226	1st. R.F.	1.5	102	1.4	96	5	=	3.5	8.5	5.0
226	UX-226	2nd. R.F.	1.5	102	1.4	96	5	=	3.5	8.5	5.0
226	UX-226	3rd. R.F.	1.5	102	1.4	96	5	=	3.5	8.5	5.0
227	UX-227	Detector	2.4	100	2.2	40	0	=	3.0	3.0	0
226	UX-226	1st. A.F.	1.5	100	1.4	83	4	=	3.5	8.0	4.5
171A	171A	2nd. A.F.	5.0	182	4.8	180	40	=	20.0	23.0	3.0
171A	171A	2nd. A.F.	5.0	182	4.8	180	40	=	20.0	23.0	3.0
260	260	Rectifier	-	-	4.5	-	-	=	20.0	-	-

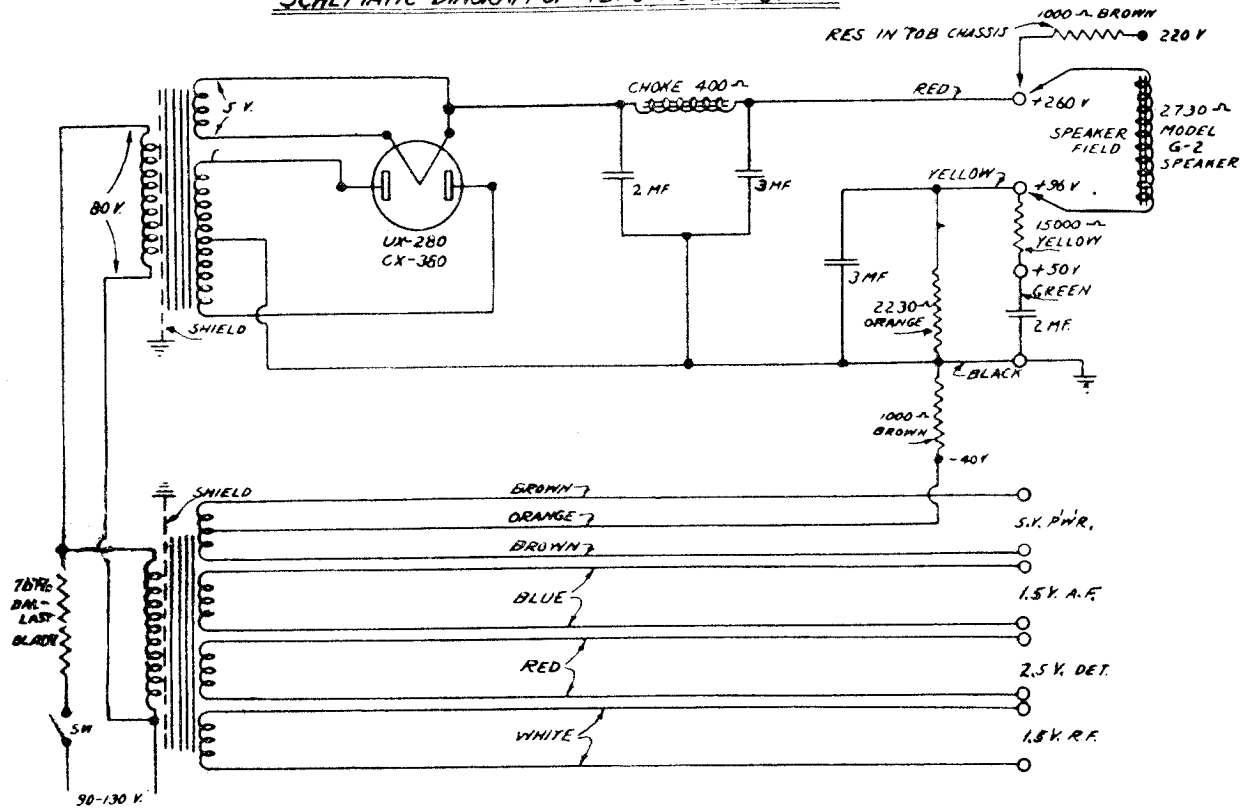
CX-371A	CX-371A	CX-326	C-327	CX-326	CX-326	CX-326
○	○	○	○	○	○	○
2nd A.F.	2nd A.F.	1st A.F.	Det.	3rd R.F.	2nd R.F.	1st R.F.

Separate Power Unit uses CX-380.

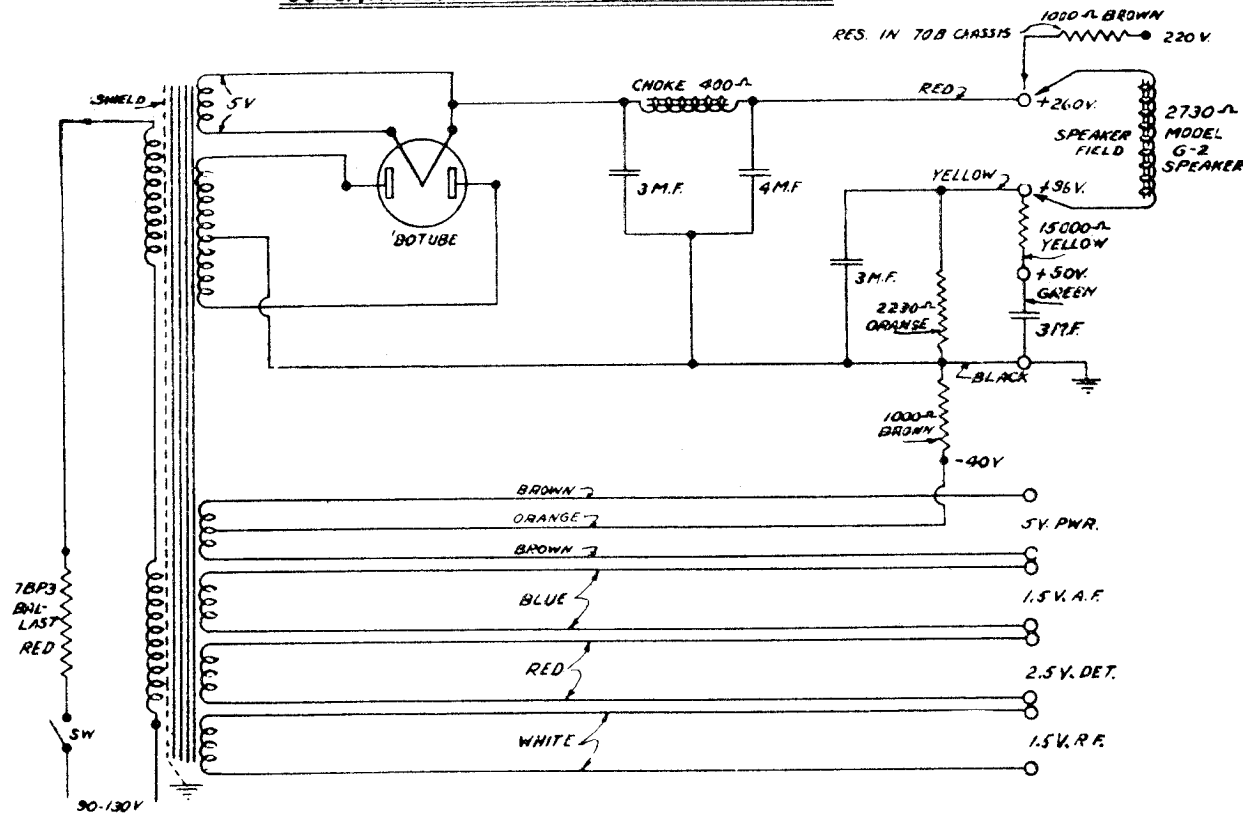
MODEL 7-BP-6,7-BP-3
Schematic

GRIGSBY - GRUNOW CO.

SCHEMATIC DIAGRAM OF 7BP6 POWER UNIT



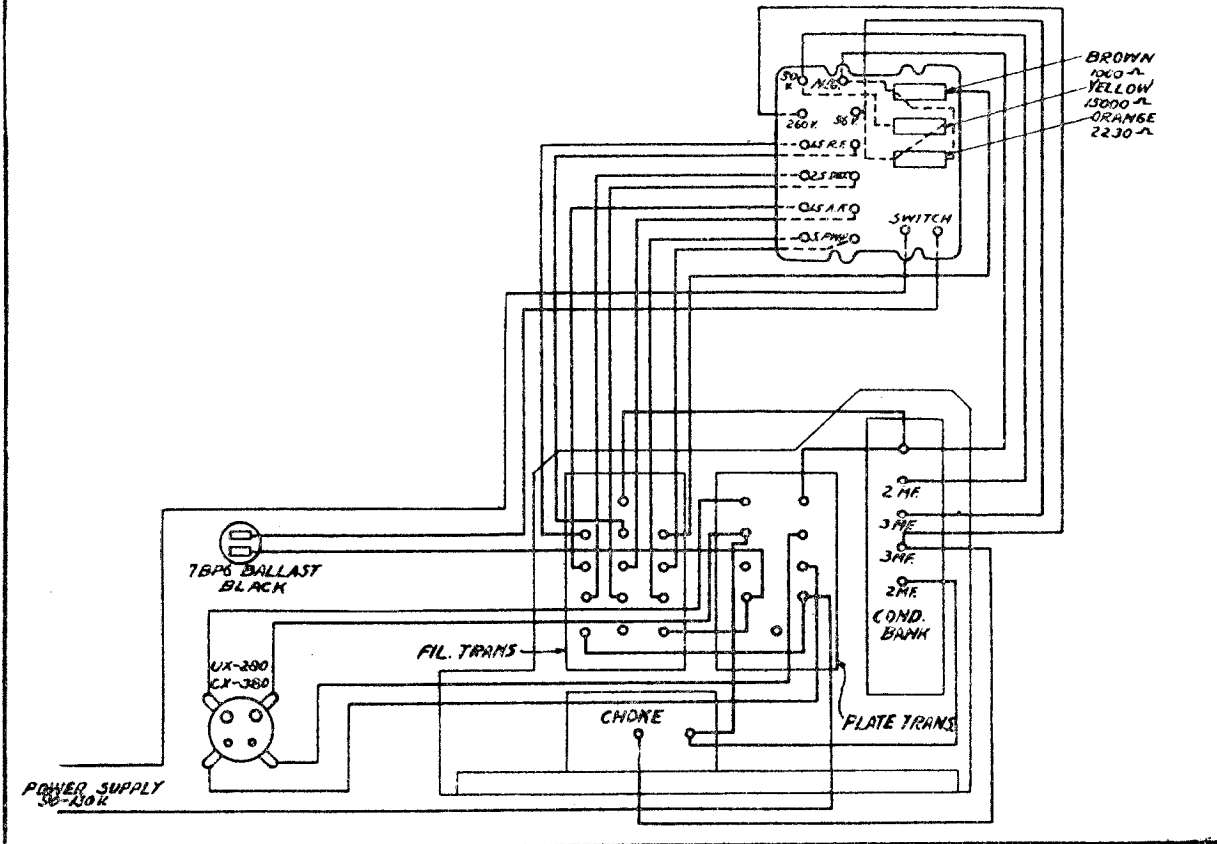
SCHEMATIC DIAGRAM OF 7BP3 POWER UNIT



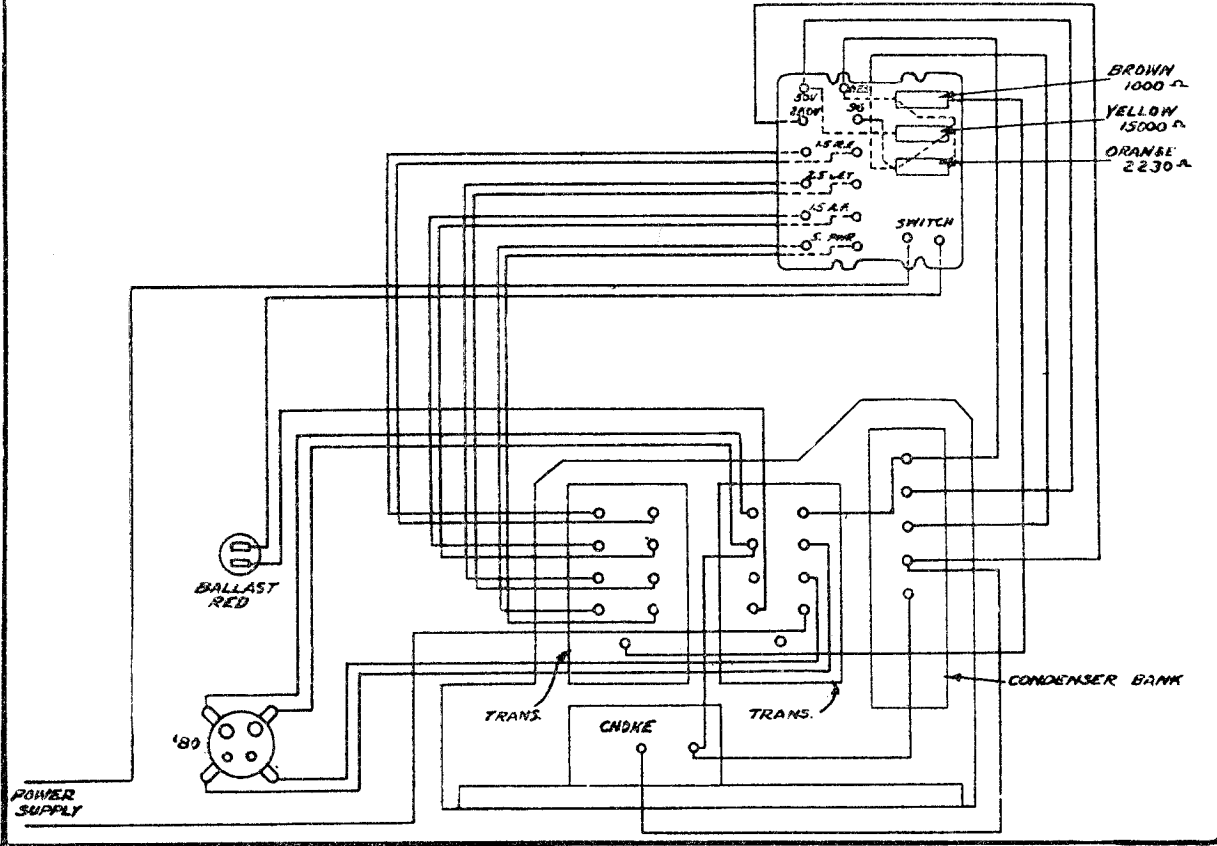
GRIGSBY - GRUNOW CO.

MODEL 7-BP-6, 7-BP-3
Wiring Diagram

WIRING DIAGRAM FOR MAJESTIC POWER UNIT - MODEL 7BP6



WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7BP3



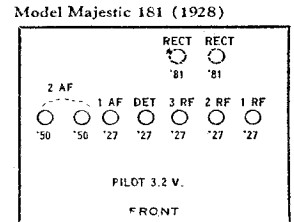
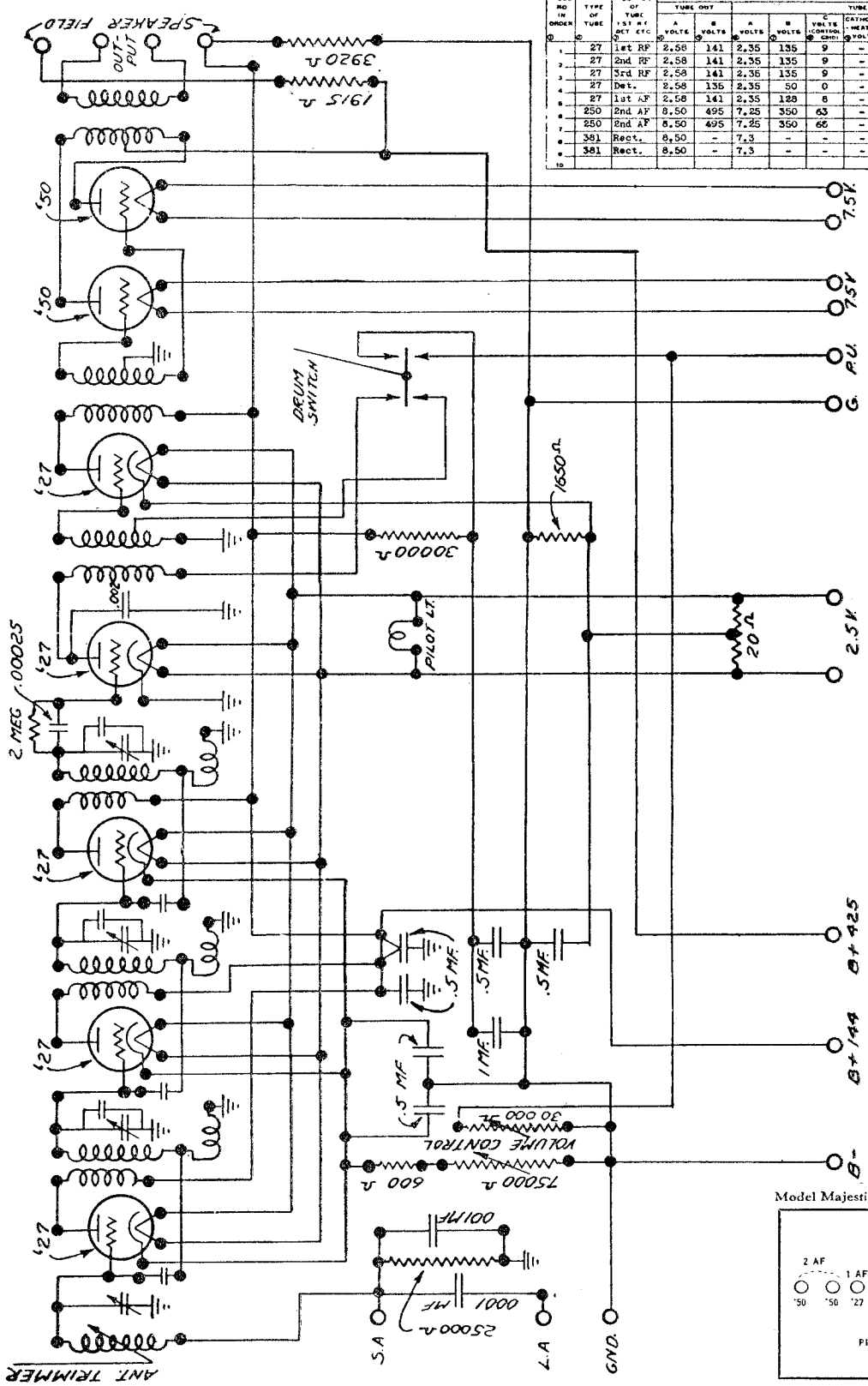
MODEL 180

GRIGSBY - GRUNOW CO.

MAJESTIC—Model 181
 Line Voltage 112—Set on *Voit Tap—Volume Control
 Position Full On
 *Voltage Regulator Is Used

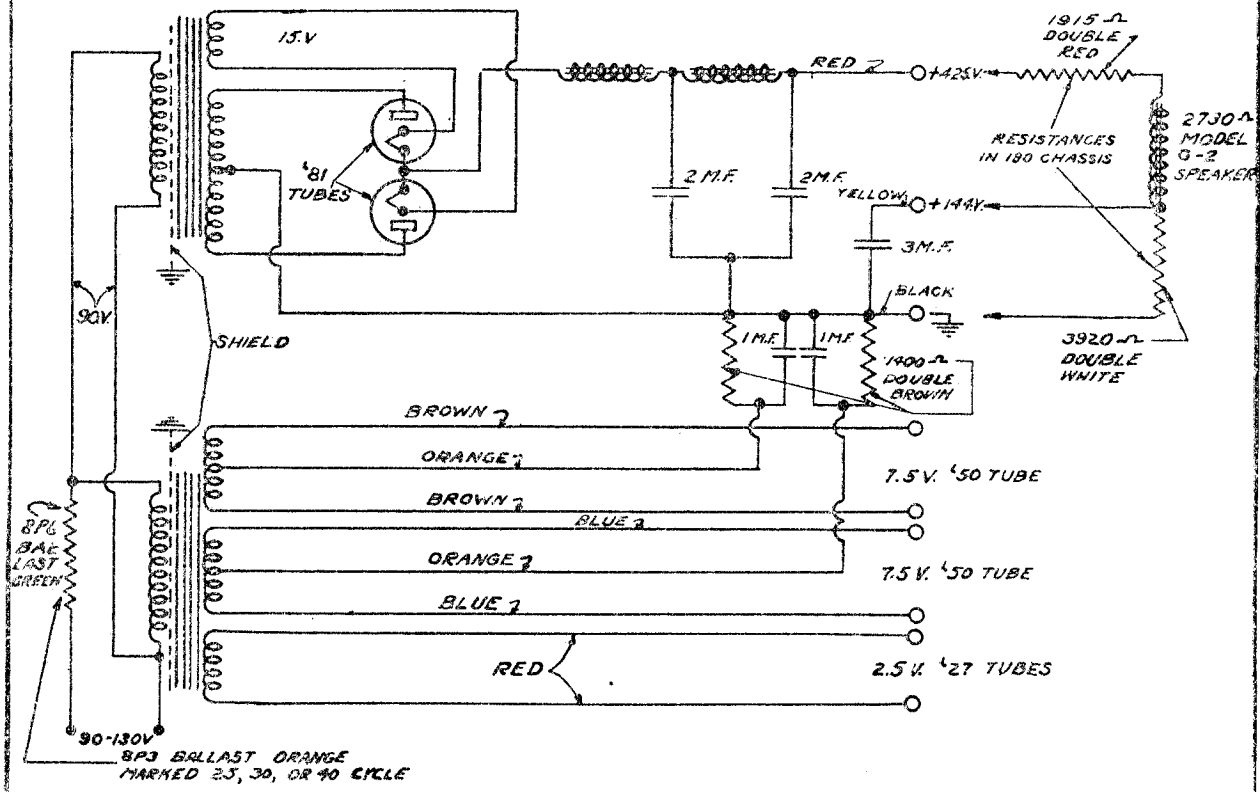
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1st, 2nd, 3rd, DET, ETC)	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CHECKING CHART)	1000 OHM METER	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHARI	SCREEN B.W. VOLTS
1	27	1st RF	2.58	141	2.35	135	9	-	5	8	3	-
2	27	2nd RF	2.58	141	2.35	135	9	-	5	8	3	-
3	27	3rd RF	2.58	141	2.35	135	9	-	5	8	3	-
4	27	Det.	2.58	135	2.35	50	0	-	3	5	-	-
5	27	1st AF	2.58	141	2.35	128	8	-	4	5.3	1.3	-
6	250	2nd AF	8.50	495	7.25	350	63	-	45	47	2	-
7	250	2nd AF	8.50	495	7.25	350	66	-	45	47	2	-
8	391	Rect.	8.50	-	7.3	-	-	-	68	-	-	-
9	391	Rect.	8.50	-	7.3	-	-	-	68	-	-	-

SCHEMATIC DIAGRAM FOR MODEL 180 MAJESTIC RECEIVER

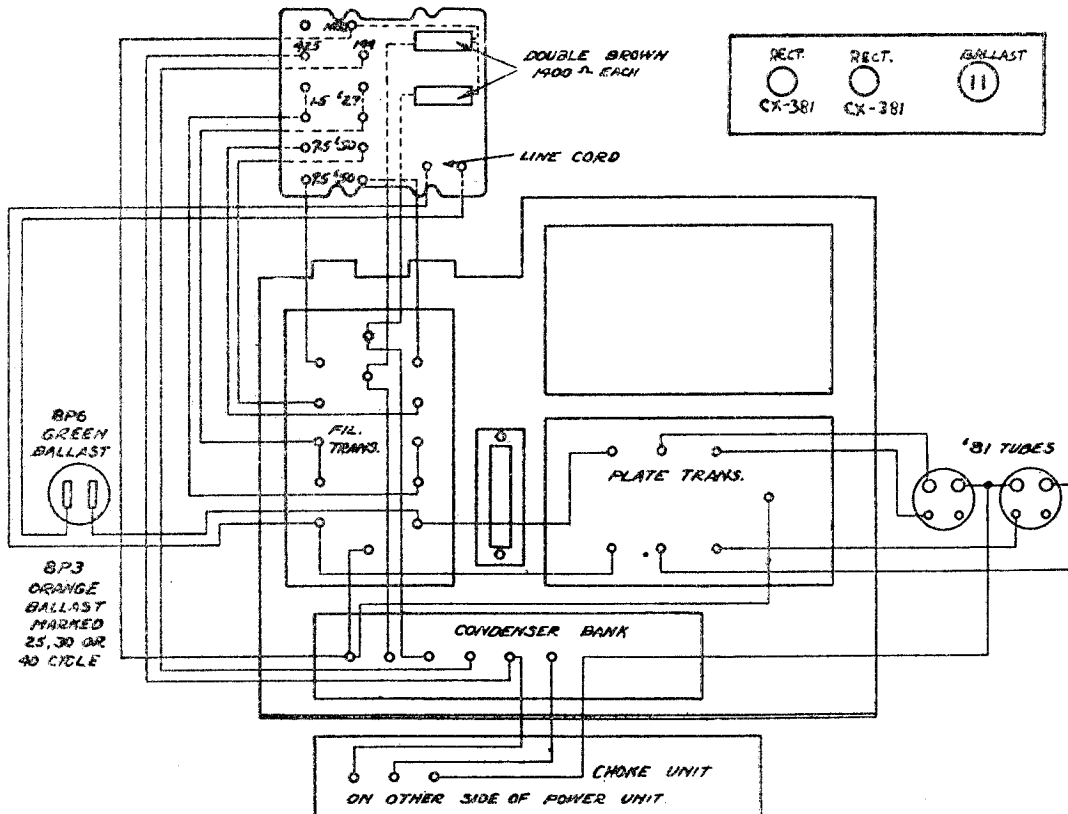


GRIGSBY - GRUNOW CO. MODEL 8-P-6, 8-P-3 Schematic, Wiring Diagram

SCHEMATIC DIAGRAM OF 8P6 & 8P3 POWER UNITS
(FOR MODEL 180 CHASSIS)



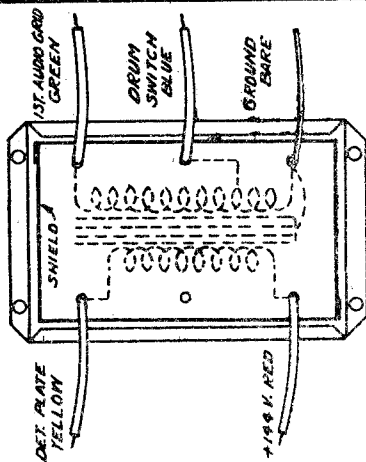
WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 8P6 & 8P3



MODELS 70-B,180
Data

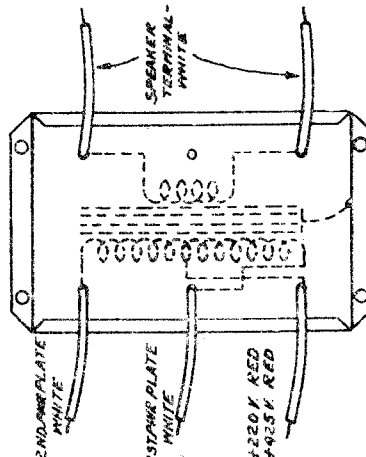
GRIGSBY - GRUNOW CO.

FIRST STAGE AUDIO TRANS 6-2B
FOR MODEL 180 CHASSIS
(VIEW LOOKING AT BOTTOM OF CAN)



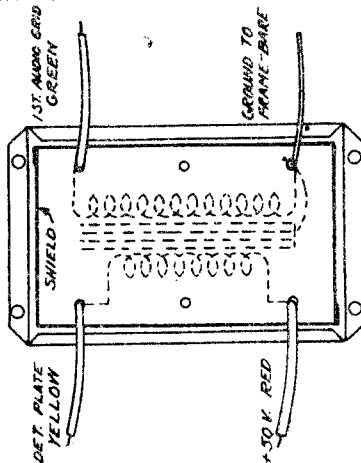
THIS END GOES AWAY FROM
TUBE SOCKETS

PUSH PULL OUTPUT TRANS 6-4
FOR MODEL 70 B & 180 CHASSIS
(VIEW LOOKING AT BOTTOM OF CAN)



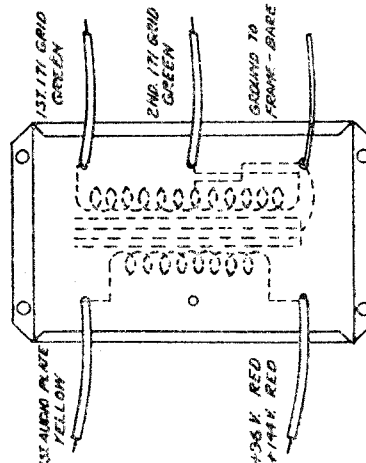
THIS END GOES AWAY FROM
TUBE SOCKETS

FIRST STAGE AUDIO TRANS 6-3B
FOR MODEL 70 B CHASSIS
(VIEW LOOKING AT BOTTOM OF CAN)



THIS END GOES AWAY FROM
TUBE SOCKETS

PUSH PULL INPUT TRANS 6-3
FOR MODEL 70 B & 180 CHASSIS
(VIEW LOOKING AT BOTTOM OF CAN)



THIS END GOES AWAY FROM
TUBE SOCKETS

GRIGSBY GRUNOW CO
JAN-1929

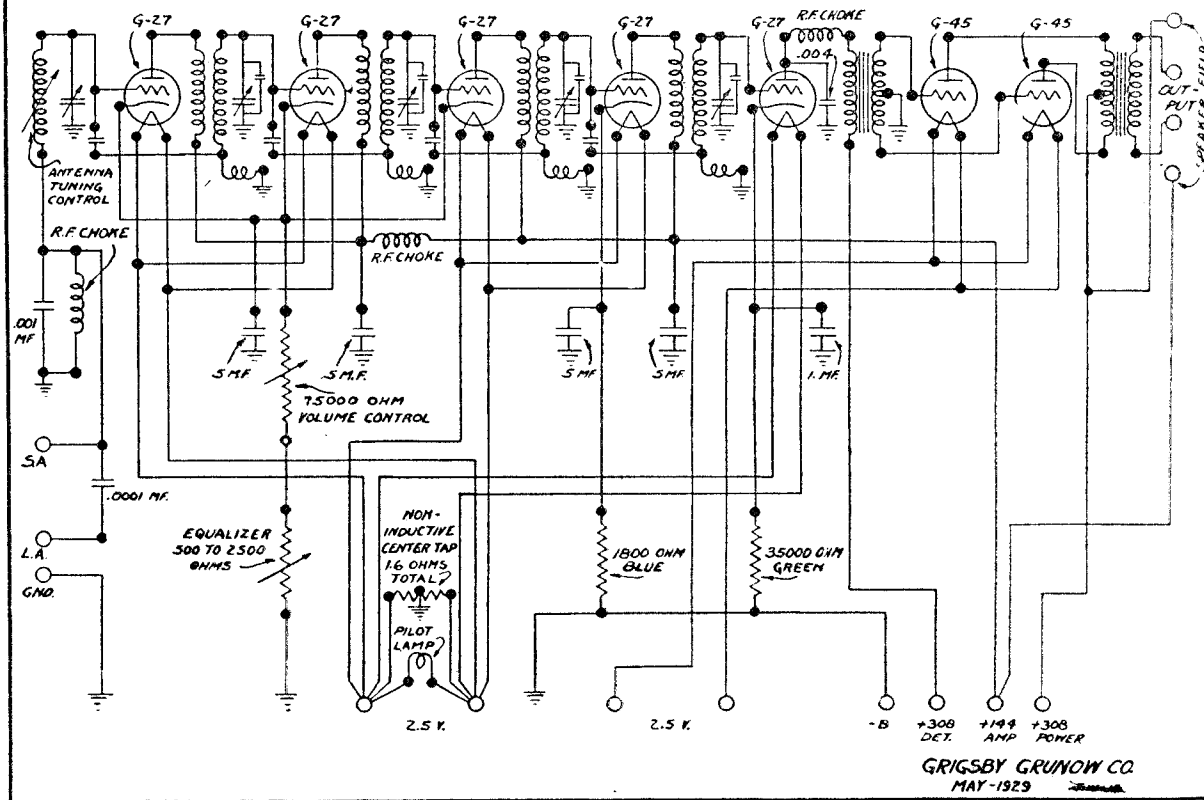
BALLAST SPECIFICATIONS FOR THE VARIOUS TYPES OF
MAJESTIC ELECTRIC POWER UNITS

POWER UNIT TYPE	FREQUENCY CYCLES PER SECOND	BALLAST MARKING	BALLAST COLOR	LINE VOLTAGE	PRIMARY VOLTS
7P6	60	B	BLACK	115	80
7P3	25-30-40	B	BLACK	115	60
7BP6	60	7BP6	BLACK	115	80
7BP6	60	7BP6	BLUE	230	160
7BP3	25	7BP3 25	RED	115	80
7BP3	30	7BP3 30	RED	115	80
7BP3	40	7BP3 40	RED	115	80
8P6	60	8P6	GREEN	115	90
8P6	60	8P6	YELLOW	230	180
8P3	25	8P3 25	ORANGE	115	90
8P3	30	8P3 30	ORANGE	115	90
8P3	40	8P3 40	ORANGE	115	90

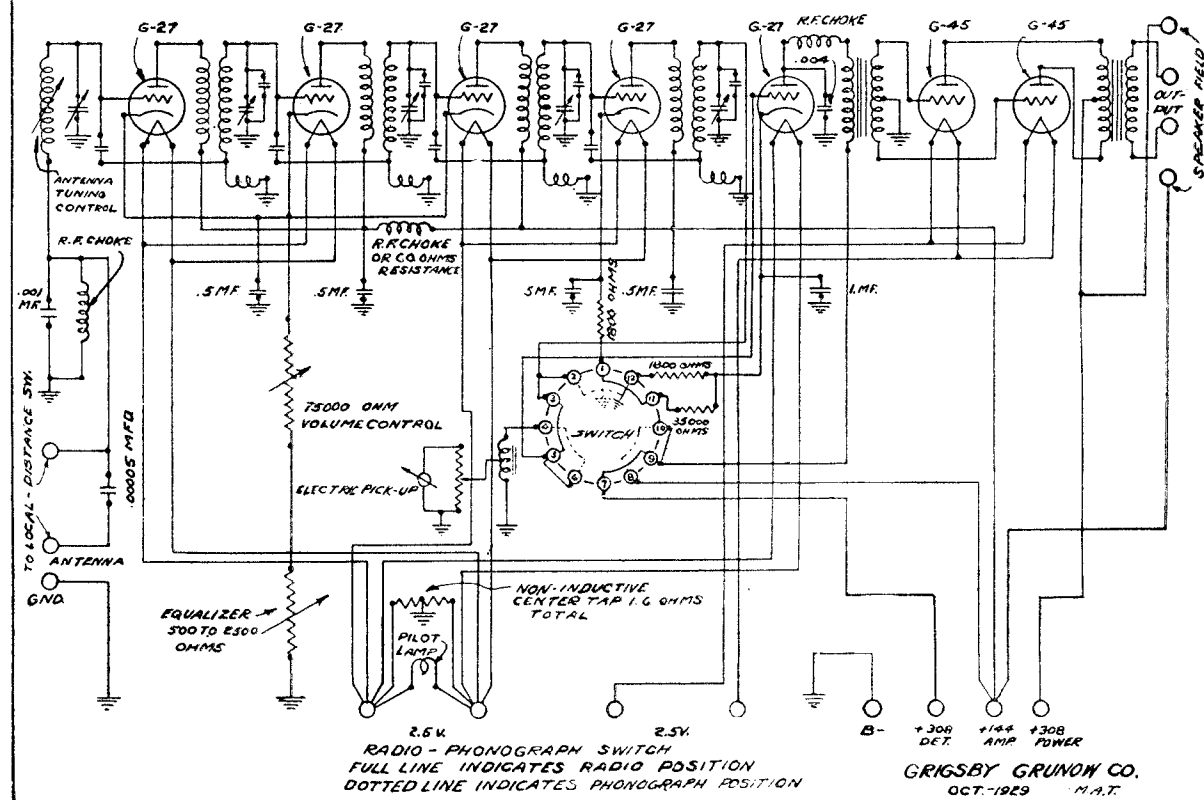
GRIGSBY - GRUNOW CO.

MODEL 90,100
Schematic

SCHEMATIC DIAGRAM FOR MODEL 90 MAJESTIC RECEIVER

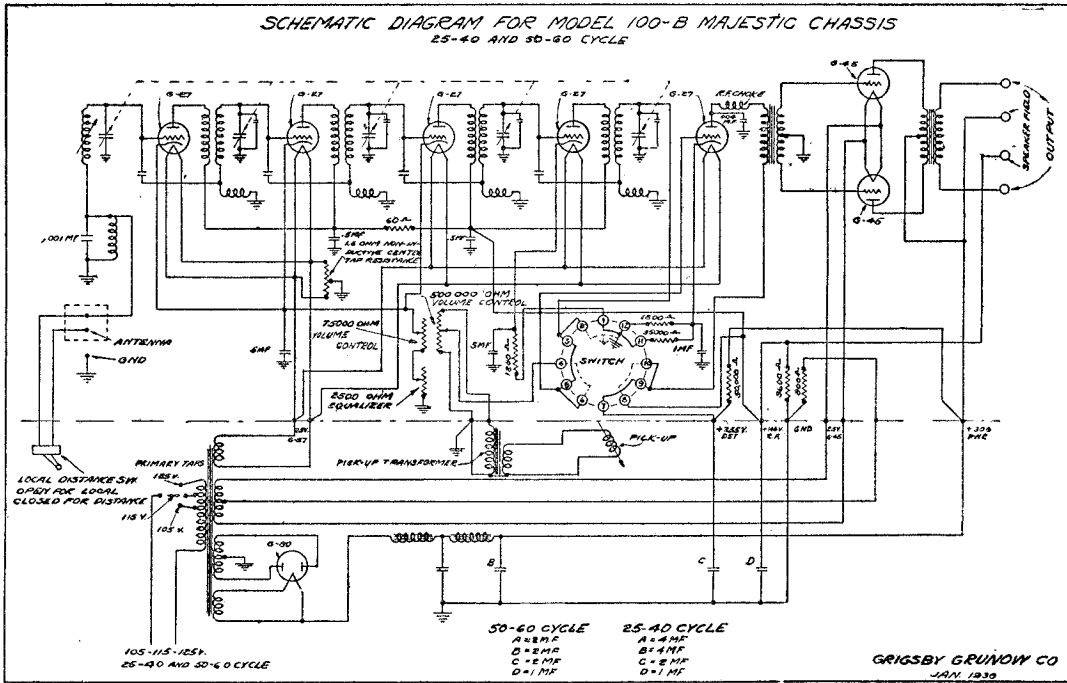
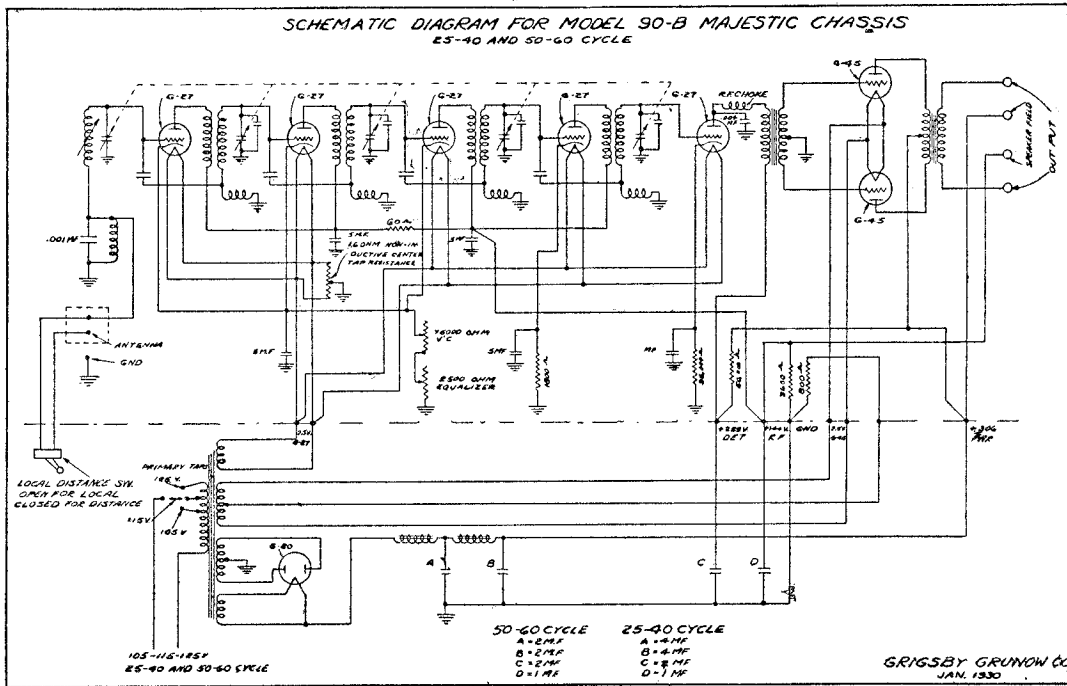


SCHEMATIC DIAGRAM FOR MODEL 100 MAJESTIC RECEIVER



MODEL 90-B
MODEL 100-B

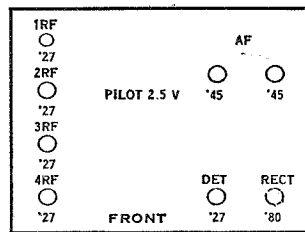
GRIGSBY - GRUNOW CO.



Line Voltage 112—Set on *Volt Tap—Volume Control
Position Full On
*Voltage Regulator Is Used

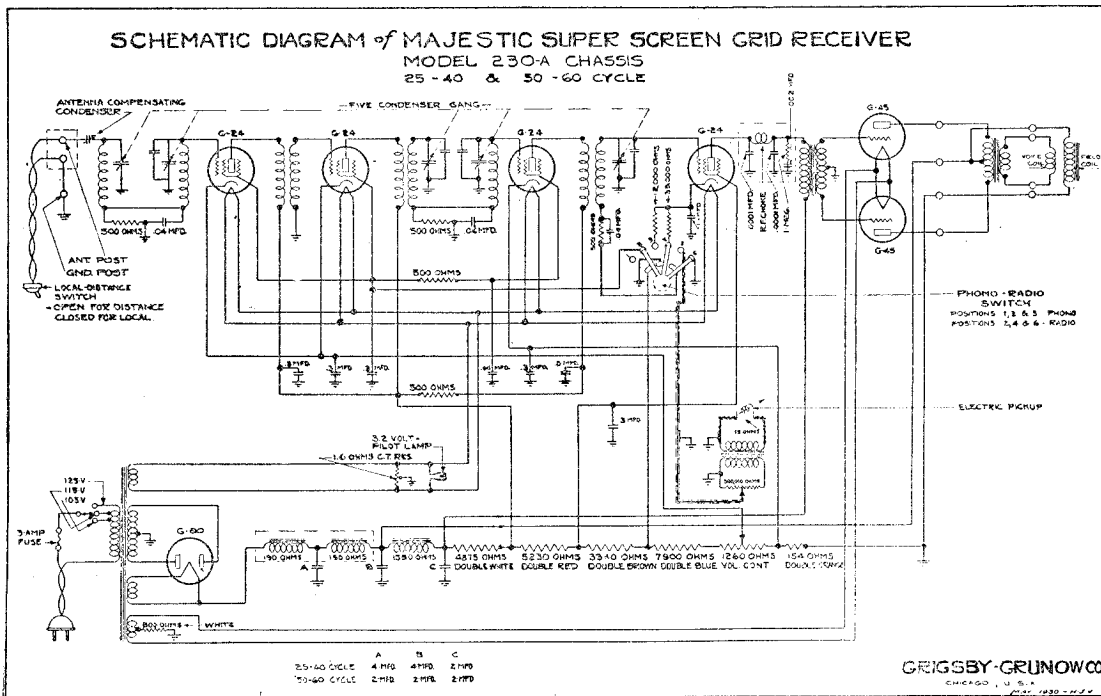
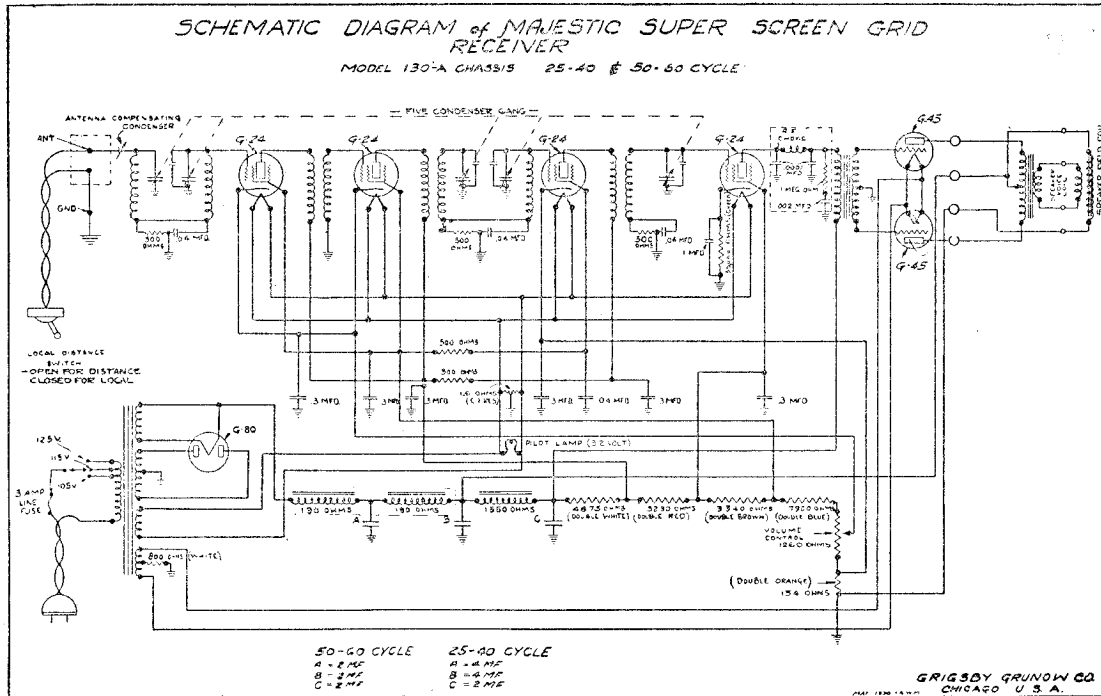
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. RF. DET. ETC.	TUBE OUT		READINGS, PLUG IN SOCKET OF SET						
			A VOLTS	B VOLTS	TUBE IN TESTER			PLATE M.A. GRID CHANGE	SCREEN GRID VOLTS		
			A VOLTS	B VOLTS	VOLTS CONTROL	CATHODE HEATH VOLTS	NORMAL PLATE TEST M.A.	PLATE TEST M.A.	PLATE M.A. GRID CHANGE	SCREEN GRID VOLTS	
1	27	1st RF	2.58	148	2.35	130	8	8	5.5	7.8	2.3
2	27	2nd RF	2.58	148	2.35	130	8	8	5.5	7.8	2.3
3	27	3rd RF	2.58	148	2.35	130	8	8	5.5	7.8	2.3
4	27	4th RF	2.58	148	2.35	130	9	9	5	7.2	2.2
5	27	Det.	2.58	306	2.35	270	30	30	1	1	1
6	245	Power	2.65	275	2.45	250	50	50	32	37	5
7	245	Power	2.65	275	2.45	250	50	50	32	37	5
8	350									100	

Models Majestics 90, 91, 92, 101 (1929)



GRIGSBY - GRUNOW CO.

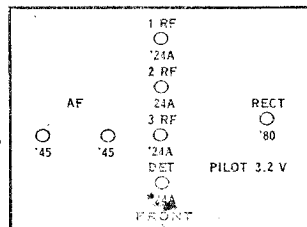
MODEL 130-A
MODEL 230-A



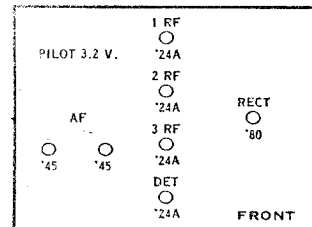
MAJESTIC—Models 130, 131, 132 and 233
Line Voltage 115—Voltage Tap 115
Volume Control Maximum

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET							
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID - SPACE GRID	SCREEN GRID - SCREEN GRID	CATHODE TO WATER	SCREEN GRID TO WATER	PLATE TO WATER	PLATE CURRENT
1	G-24	1 R. P.	2.75	180	3	90	3	-	3	
2	G-24	2 R. P.	2.75	180	3	90	3	-	3	
3	G-24	3 R. P.	2.75	180	3	90	3	-	3	
4	G-24	4th.	2.75	285	12	185	12	-	5	
5	G-45	PP-AP	2.45	250	-	50	-	-	32	
6	G-45	PP-AP	2.45	250	-	50	-	-	32	
7	G-80	Rect.	4.8	-	-	-	-	-	45	45

Models 130A, 230A (1930)



Models Majestic 130, 131, 132, 233 (1930)

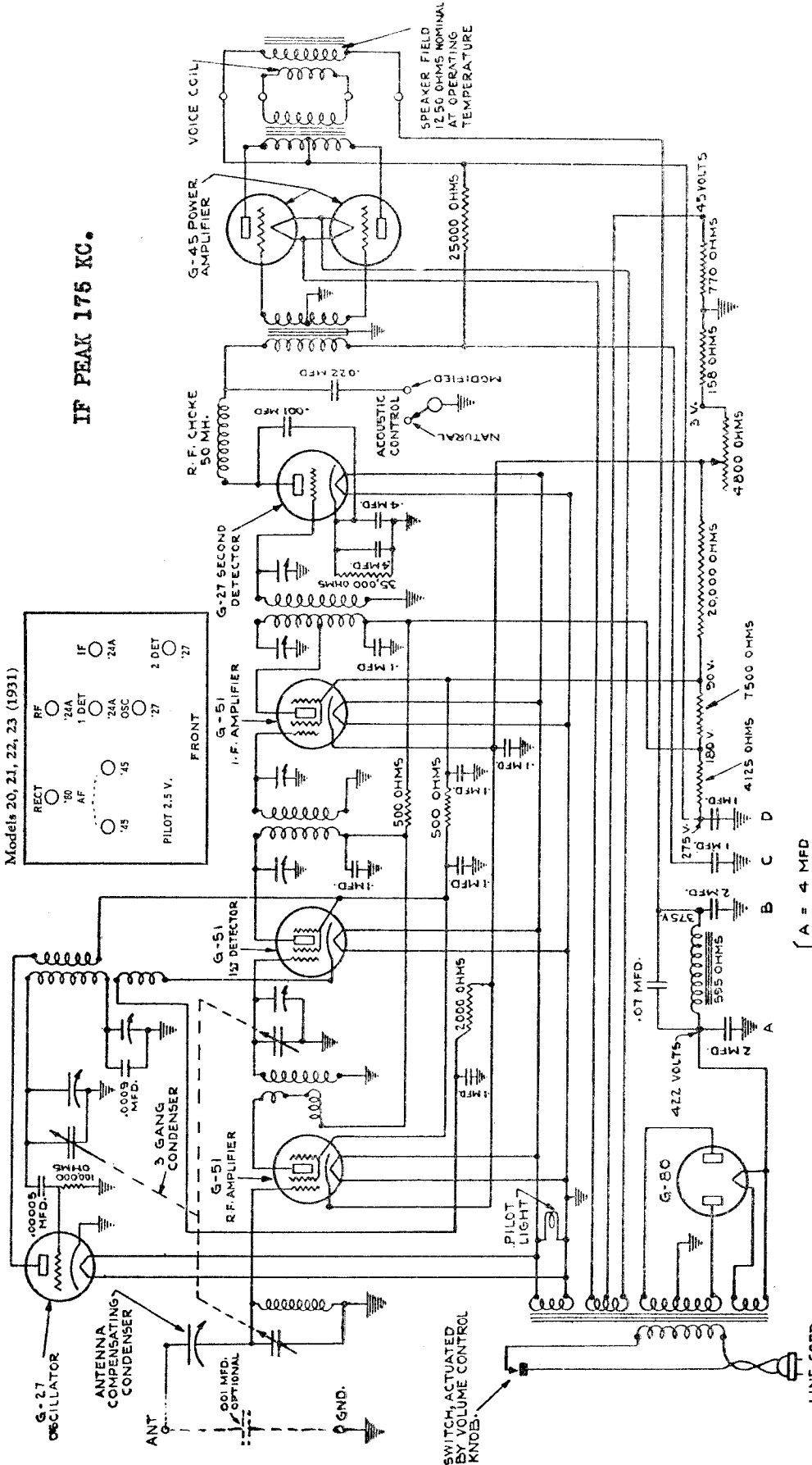
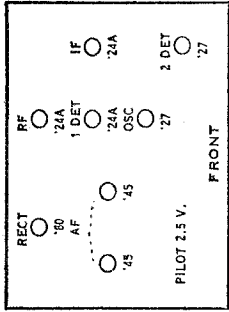


MODEL 20,21,22,23

GRIGSBY - GRUNOW CO.

IF PEAK 175 KC.

Models 20, 21, 22, 23 (1931)



Tube	Fil.V.	Plt.V.	Grd.V.	Cath.V.	So.Gr.V.	V. Plt.	Crnt
1RF	2.32	180.	3.	90.			5. ma
Osc.	2.32	90.	0.				4.
1Det.	2.32	180.	8.	90.			1.
1IF	2.32	180.	3.	90.			5.
2Det	2.32	255.	21				8.
PPAF	2.36	275.	45.				28.
PPAF	2.36	275.	45.				28.
Rec.	4.88	410.					80.

CONDENSER COLOR CODE
 2 mfd condenser- Orange, stranded
 2 mfd condenser- Blue, stranded
 1 mfd condenser- Red, stranded
 1 mfd condenser- Green stranded
 Condenser common- Black stranded
 .07 mfd condenser- White stranded

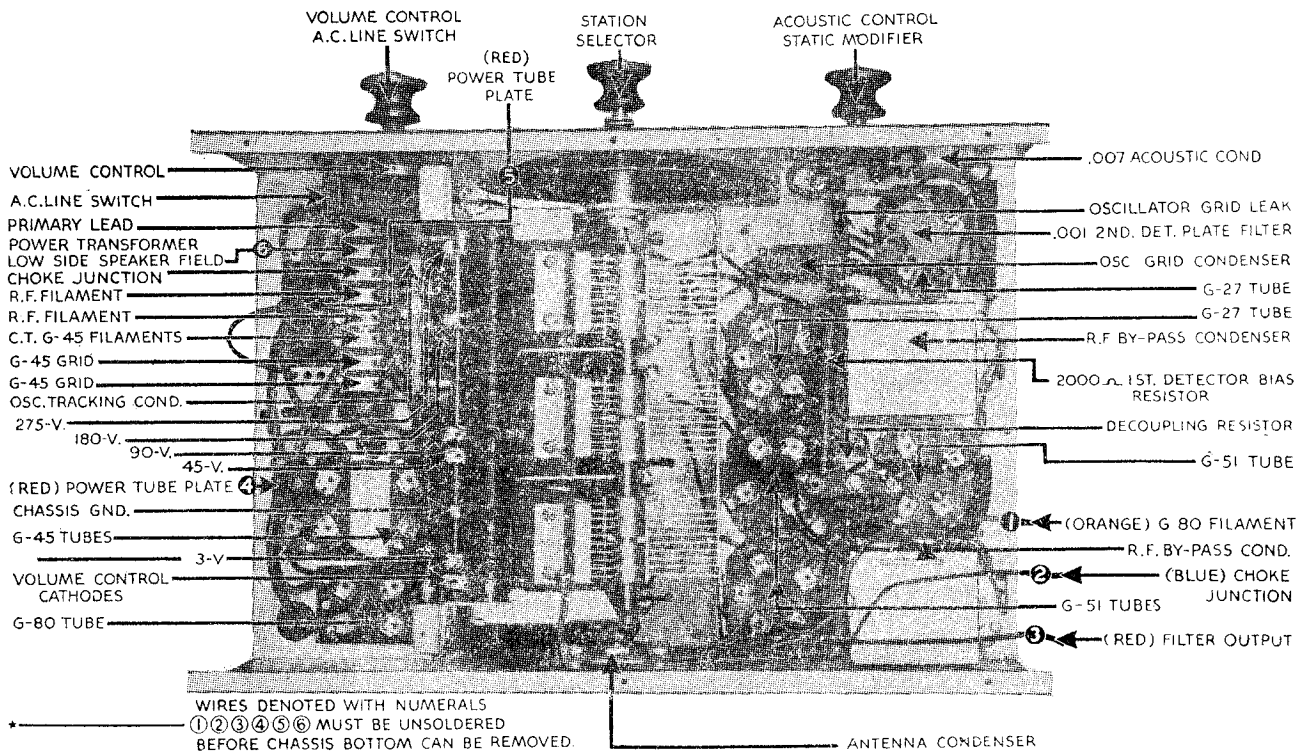
25-40 CYCLE
 A = 4 MFD
 B = 2 MFD
 C = 1 MFD
 D = 1 MFD

SWITCH, ACTIVATED BY VOLUME CONTROL KNOB.

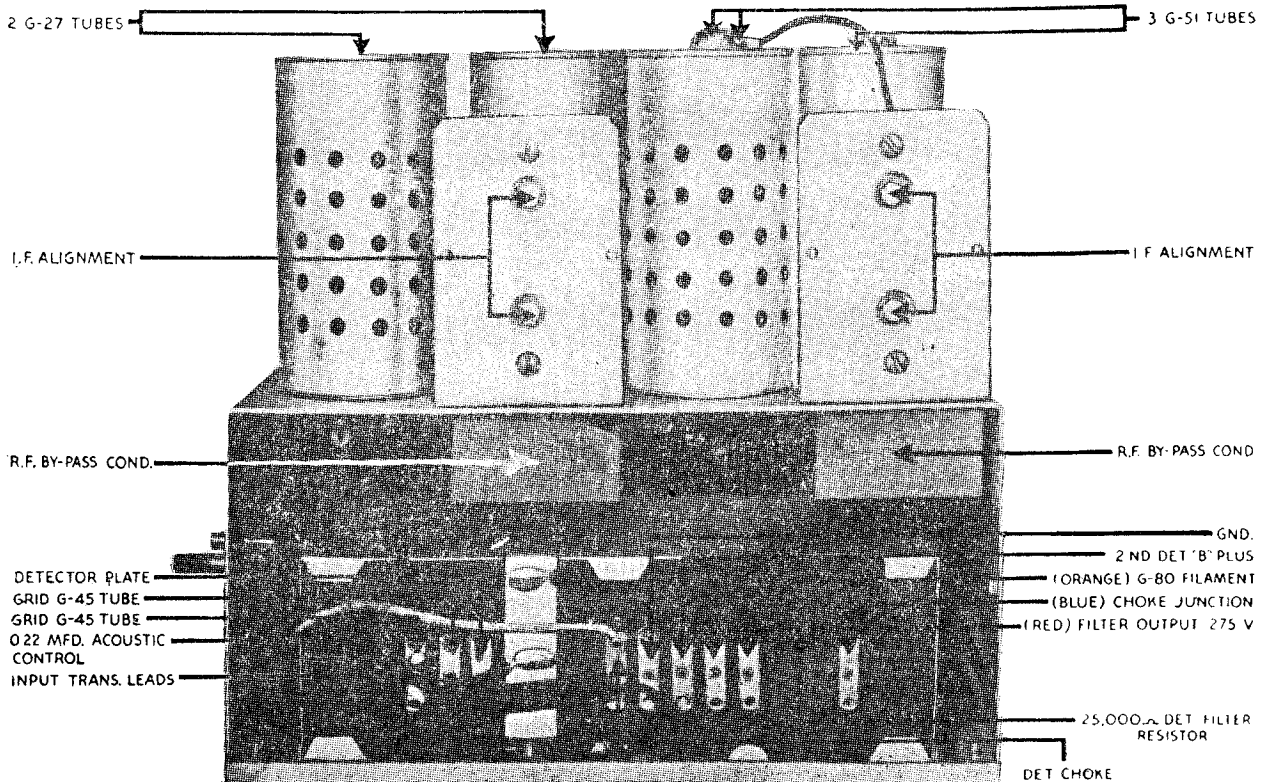
LINE CORD

GRIGSBY - GRUNOW CO.

MODEL 20
Chassis



Bottom View of Model 20 Chassis

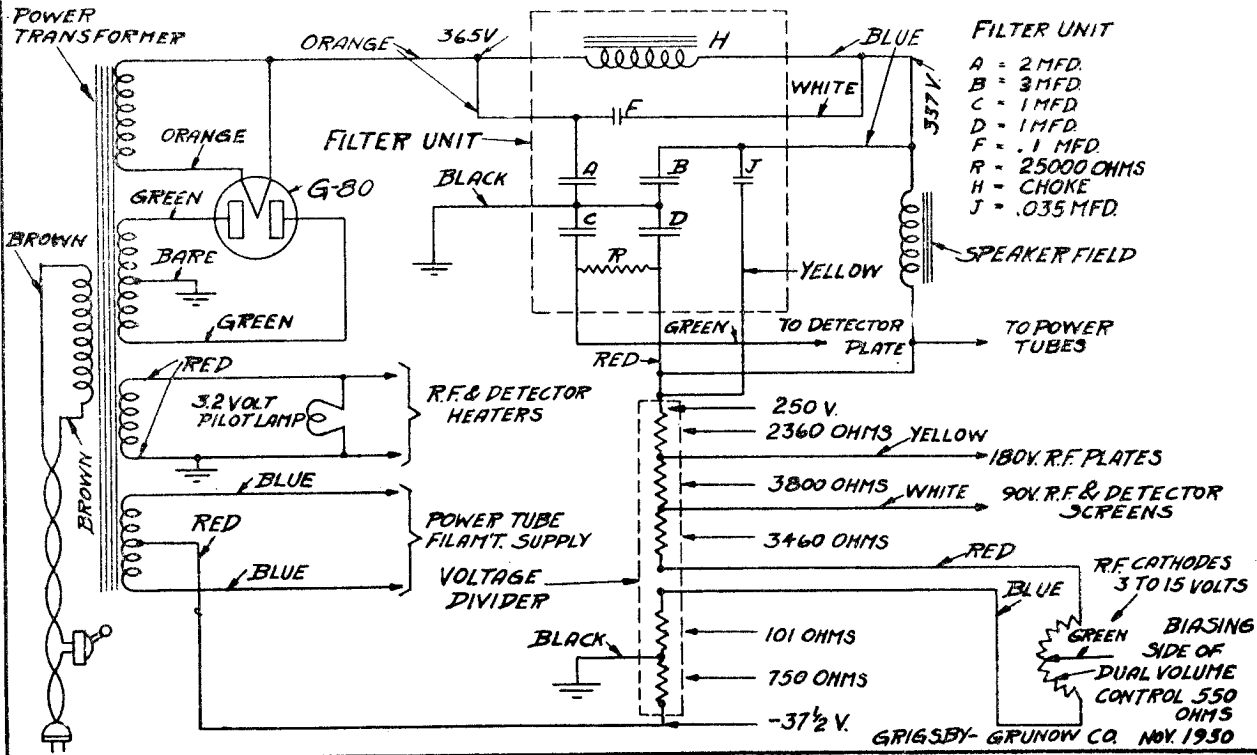


End View of Model 20 Chassis

GRIGSBY - GRUNOW CO.

MODEL 30
Voltage-Data

SCHEMATIC DIAGRAM OF POWER UNIT AND VOLTAGE DIVIDER SYSTEM
MODEL 30 MAJESTIC SCREEN GRID CHASSIS 50-60 CYCLE.



FILTER UNIT

- From:**
Orange 2 mfd. condenser
Blue 3 mfd. condenser
Green 1 mfd. condenser
Red 1 mfd. condenser
Yellow .035 mfd. condenser
White .10 mfd. condenser
Black condenser common
- Connect to:**
G-80 Socket (Filament)
Junction of Speaker Field and Choke
Start of Primary of Input Transformer
Free end of 2360 ohm resistor
Free end of 3800 ohm resistor
Junction of Speaker Field and Choke
Ground
- Choke**
(G-80 socket (Filament))
Junction of speaker field and choke

Caution

Under no condition, attempt to use a ground connection on the antenna binding posts. Be certain that the antenna and ground wires are on their respective posts. Under no circumstances should a gas pipe be used for a ground.

Model G-6 Dynamic Speaker

The Model G-6 Dynamic Speaker used on the Model 30 receiver is a highly efficient speaker. The field construction is of the improved "J" type. The field coil is treated in an impregnating compound that keeps it weatherproof and allows air cooling. The field coil resistance is 1,000 ohms. The G-6 speaker uses a nine inch cone of waterproof lacquered bakram made by the same process as the Super-Coltura G-5 cone. The G-6 Dynamic Speaker has been designed to give a uniform response over the audio frequency range. The cone coil is the same as used on Model G-5 Speaker.

Speaker Cables

During the periods of production of the G-6 Speaker, different colored wires will be used for the field and voice coil leads, in the cable. So that the service man may easily check the circuits, we are listing below the three groups which will be used:

Standard Cable	Reversed Cable	Chassis Connections		Speaker Terminal Connections	
		Secondary of Output Transformer	"B" Maximum on Multiple Resistor	White - Voice Coil Leads	Blue - Field Leads
Blue	Red	White	White	White	White
Blue	Red	White	White	White	White
Red	Yellow	Red	Red	Red	Red
Black	Green	Blue	Blue	Blue	Blue

For example you may be called upon to check a Receiver and Speaker, and upon examination you find that the leads are two White wires, and a Red and a Blue wire. Reference to the group above will eliminate any trouble you might experience in determining whether the leads in question are voice coil or field coil leads.

Table of Voltages

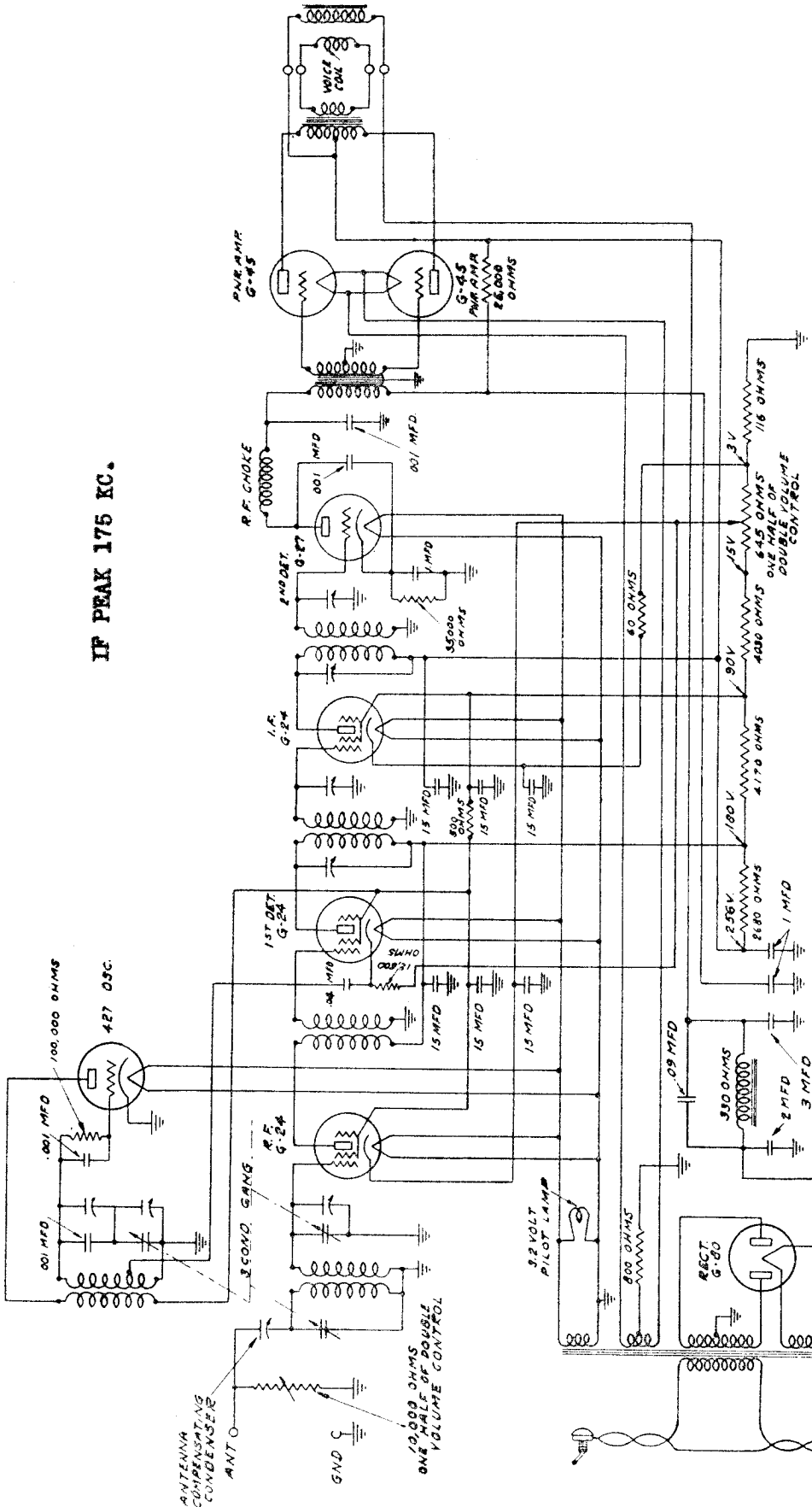
Stage	Tube	Fil. Volts	Plate Volts	Grid Volts	Cath. Volts	Normal Plate M. A.	Screen Volts
1st R. F.	G-24	2.35	180	3	3	3	90
2nd R. F.	G-24	2.35	180	3	3	3	90
Detector	G-24	2.35	225	10	10	3	90
1st Pwr.	G-45	4.35	250	37.5	25	25	
2nd Pwr. Rect.	G-80	2.35	250	37.5	25	25	
	G-80	4.80	358			40	

NOTE: All Plate, Screen Grid, Control Grid, and Cathode Voltages are measured from Ground (chassis) with a standard 1,000 ohm per volt, voltmeter.

MODEL 50,52

GRIGSBY - GRUNOW CO.

IF PEAK 175 KC.

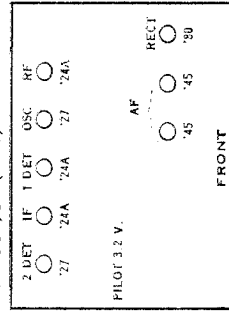


MAJESTIC—Model 52
Line Voltage 110 + = Volume Control Full On

METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF MET

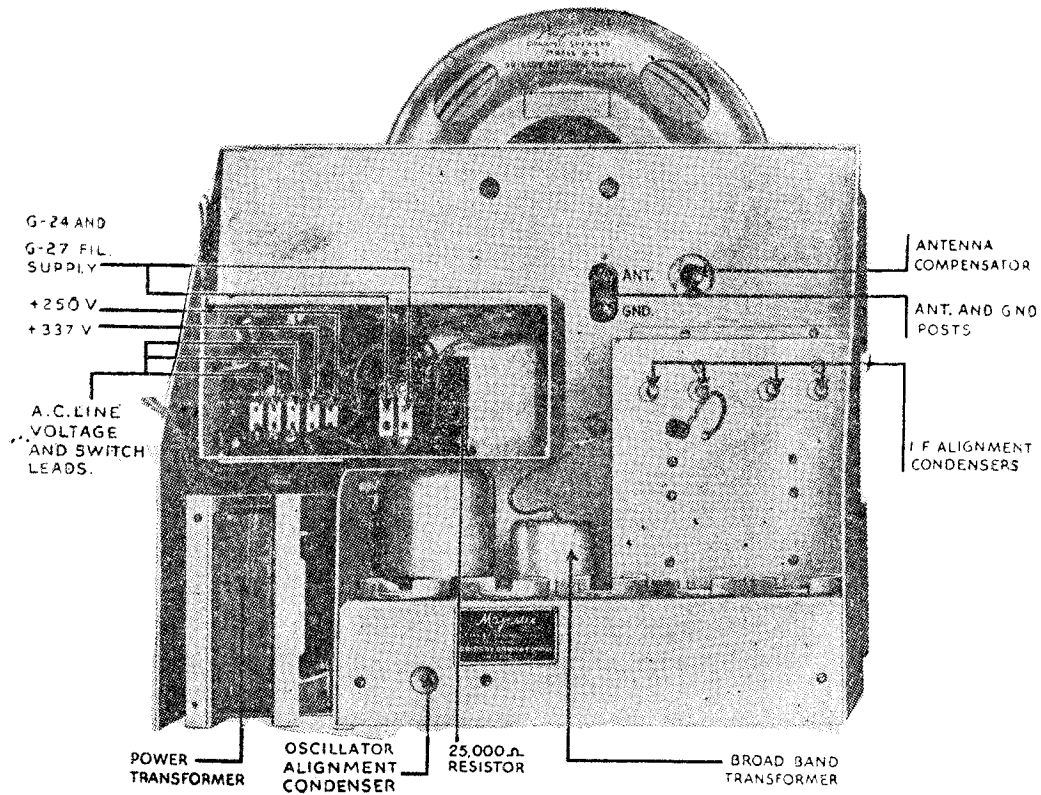
TUBE NO.	TYPE	POSITION OF SET	OPERATING VOLTAGES		MILLIAMPERES		PHASE					
			PLATE	GRID	CONTROL	RECHARGE		PLATE	TEST			
1	G 24	1 R.P.	2.35	1.80	3	90	0	.6	3	5.5	2.5	2.5
2	G 27	2 Det.	2.35	1.80	3	90	0	0	7.3	7.2	.5	.5
3	G 24	1 Det.	2.35	1.80	6.5	90	0	0	1.3	.5	.2	.2
4	G 27	2 Det.	2.35	2.85	4.0	90	0	2.35	7.0	6.8	1.2	1.2
5	G 45	PP-AF	2.35	2.10	22	22	0	0	6	1.8	.8	.8
6	G 45	PP-AF	2.35	2.10	22	22	0	0	25.0	30.0	5.0	5.0
7	G 80	Rect.	4.9	2.10	0	0	0	0	25.0	30.0	5.0	5.0

Models 50, 52 (1930)

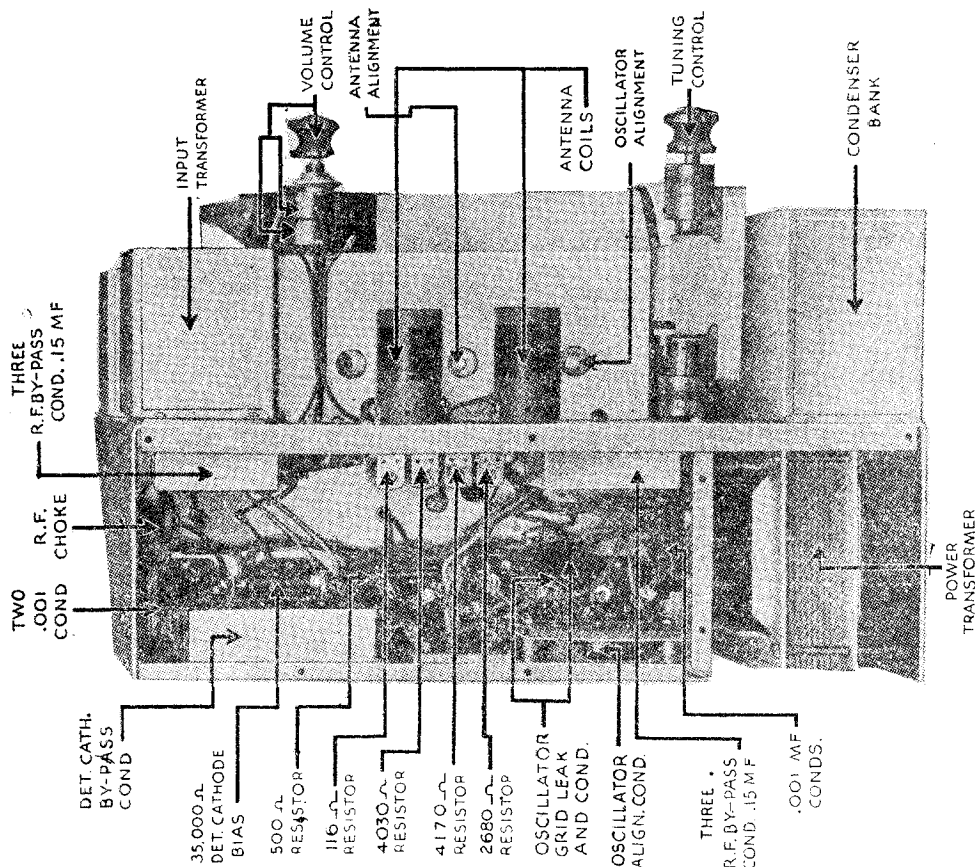


GRIGSBY - GRUNOW CO.

MODEL 50
Chassis Views



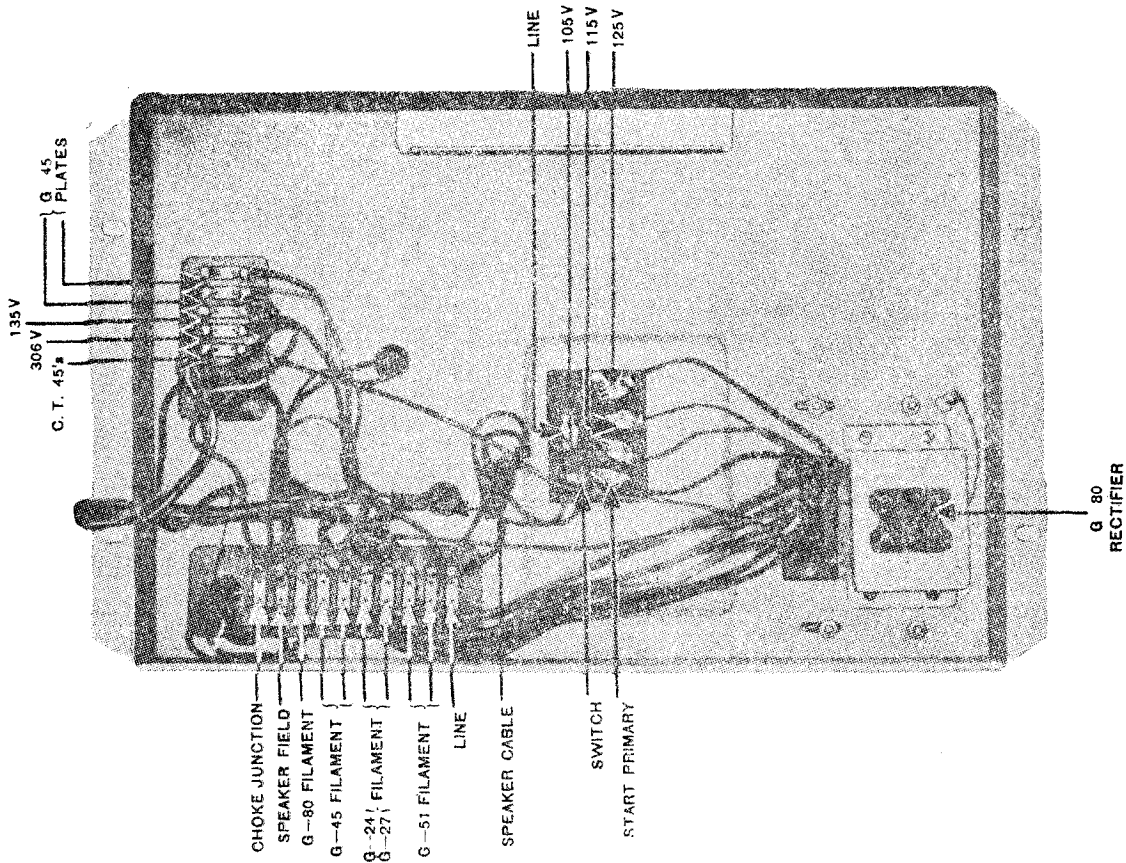
Rear View of Model 50 Chassis, Showing Voltage Taps, Etc.



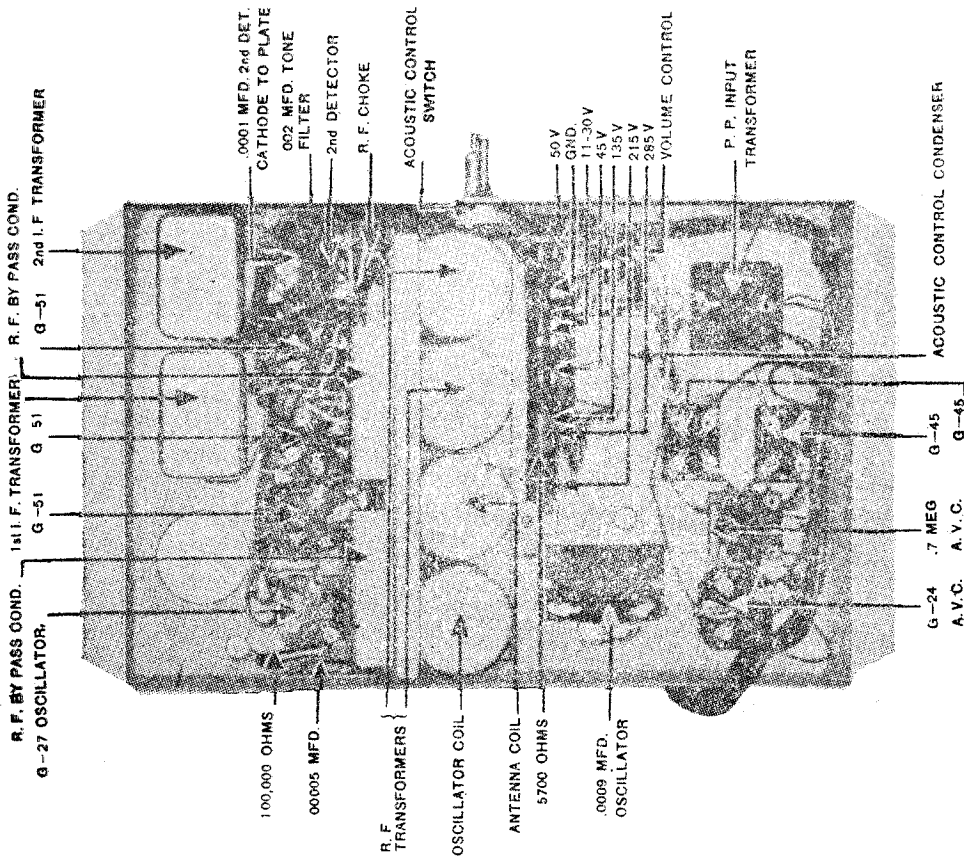
Bottom View of Model 50 Chassis

MODEL 60,61
Chassis Views

GRIGSBY - GRUNOW CO.



View Showing Power Supply Circuit Model 60 Chassis



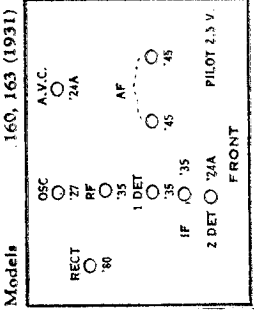
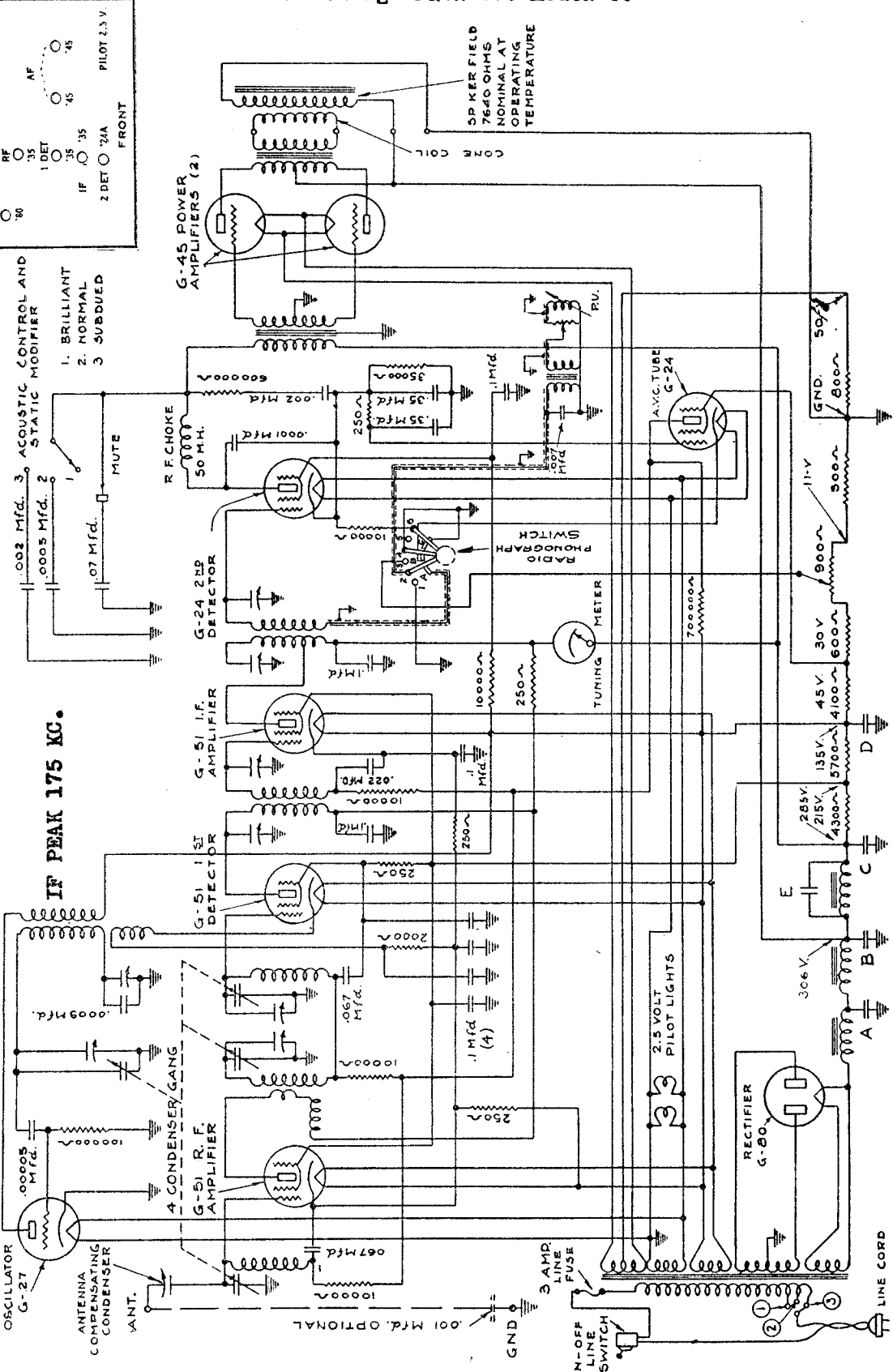
Interior View Model 60 Chassis

GRIGSBY - GRUNOW CO.

MODEL 160,163
Schematic

For Voltage Data See Model 60

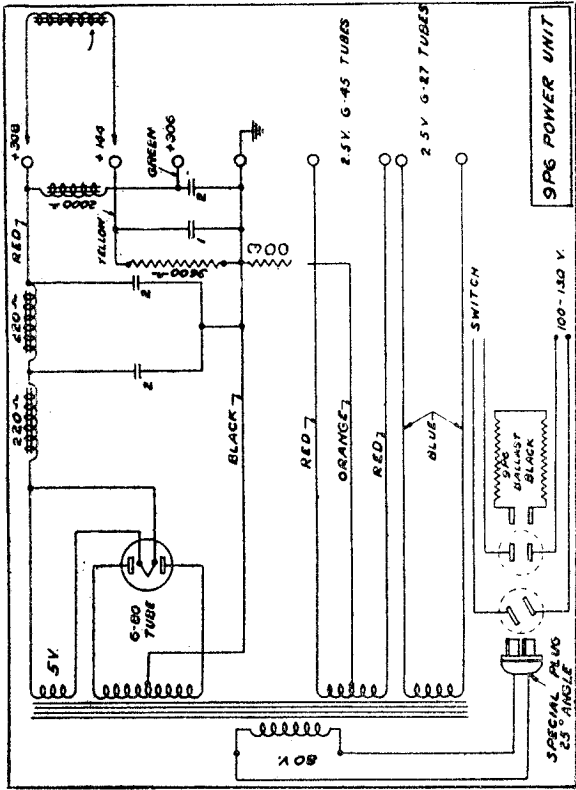
Schematic Diagram of Majestic Screen Grid Superheterodyne Automatic Volume Control Receiver and Electric Phonograph Combination Model 160 Chassis 115 and 220 Volts, 25 - 40 and 50 - 60 Cycles.



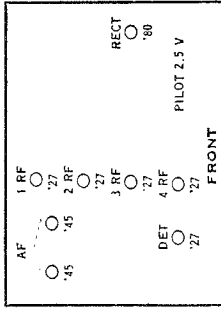
NOMINAL - VOLTAGE - ACTUAL	WATTS - CYCLES - M.F.D.S.				
	A	B	C	D	E
(115)	2	2	1	1	.07
(220)	4	3	3	1	.25

MODEL 9-P-3, 9-P-6
Schematic, Data

GRIGSBY - GRUNOW CO.

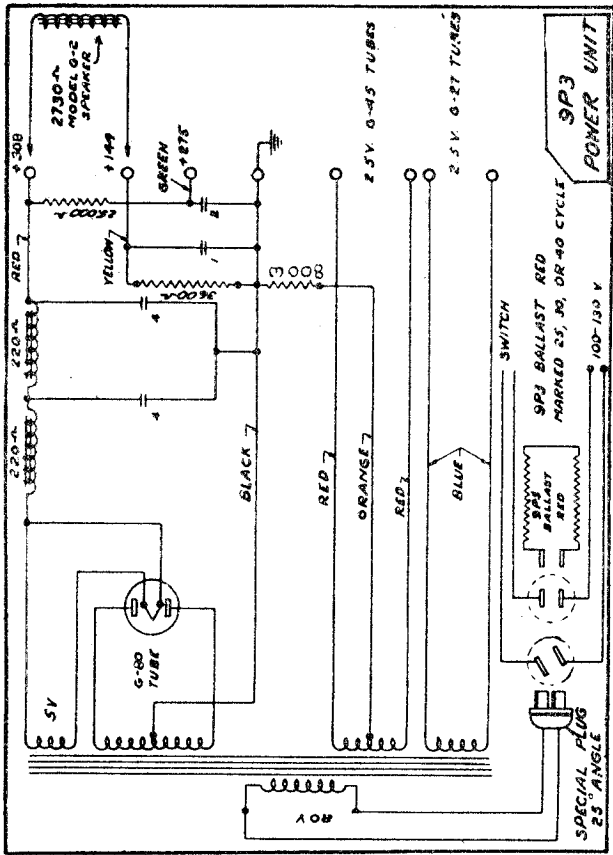


Models 90B, 91, 92, 93, 100B, 102, 103 (1930)



MAJESTIC—Model 91 and 92
Line Voltage 112—Set on *Volt Tap—Volume Control
Position Full On
*Voltage Regulator Is Used

TUBE NO. ON CHASSIS	TYPE OF TUBE	POSITION OF TUBE	TUBE OUT		TUBE IN		TUBE IN TESTER		PLATE VOLTS	SCREEN VOLTS
			A	B	A	B	A	B		
1	27	1A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
2	27	2A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
3	27	3A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
4	27	4A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
5	27	5A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
6	27	6A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
7	27	7A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
8	27	8A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
9	27	9A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
10	27	10A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
11	27	11A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
12	27	12A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
13	27	13A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
14	27	14A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
15	27	15A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
16	27	16A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
17	27	17A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
18	27	18A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
19	27	19A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
20	27	20A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
21	27	21A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
22	27	22A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
23	27	23A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
24	27	24A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
25	27	25A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
26	27	26A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
27	27	27A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
28	27	28A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
29	27	29A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
30	27	30A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
31	27	31A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
32	27	32A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
33	27	33A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
34	27	34A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
35	27	35A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
36	27	36A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
37	27	37A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
38	27	38A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
39	27	39A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3
40	27	40A1	2.58	1.48	2.35	1.30	8	5.5	7.8	2.3



Coding of 1928 and 1929 Models

1. Parts with like part number in different assemblies and models are interchangeable others are not.

2. The following prefixes and model numbers are for 1928 apparatus assemblies:

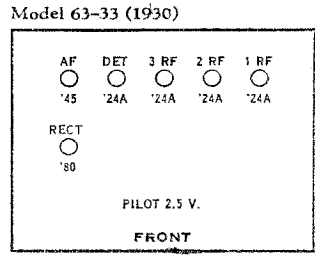
- GA G1—Power Speaker for 7-A Chassis only
- 70-A 7-A—Chassis for 1928 No. 71 and No. 72 models only
- 60-A 6-A—Chassis for 1928 No. 61 and No. 62 models only
- 7P-6 Power Pack, 60 cycle for No. 7-A Chassis only
- 7P-3 Power Pack, 30 cycle for No. 7-A Chassis only
- 6P-6 Power Pack, 60 cycle for No. 6-A Chassis only
- 6P-3 Power Pack, 30 cycle for No. 6-A Chassis only

The following prefixes and model numbers are for 1929 apparatus assemblies.

- GB G2—Super Dynamic Speaker for 7-B Chassis and 180 Chassis
- 70B 7-B—Chassis for 1929 No. 71 and No. 72 models only
- 180 180—Chassis for 1929 No. 181 radio and phonograph combination
- 7-BP-6 Power Pack, 60 cycle for 7-B Chassis only
- 7-BP-3 Power Pack, 30 cycle for 7-B Chassis only
- 8-P-6 Power Pack, 60 cycle for 180 Chassis only
- 8-P-3 Power Pack, 25, 30, 40 cycle for 180 Chassis only

GULBRANSEN CO.

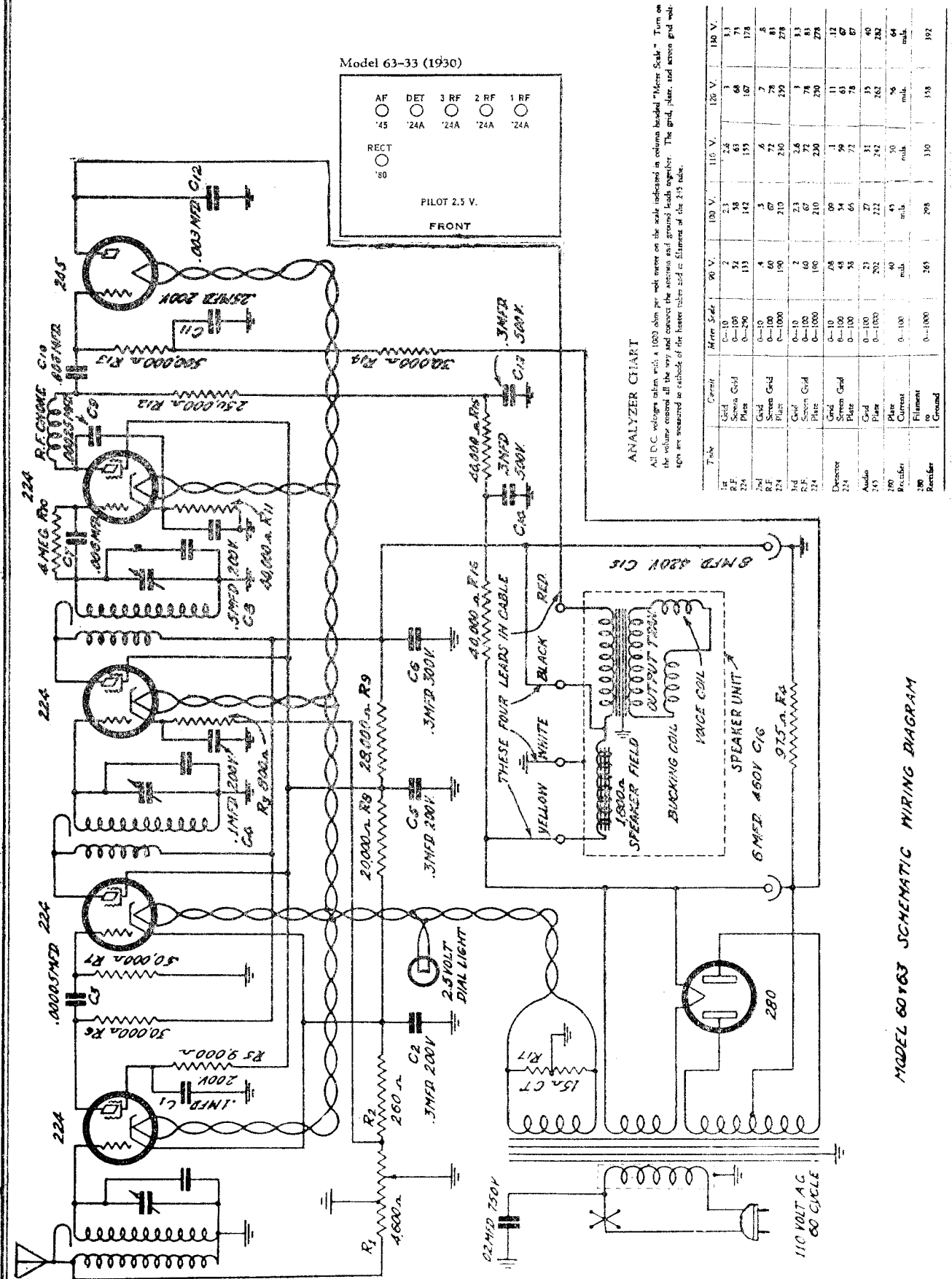
MODEL 60, 63
Schematic
Voltage



ANALYZER CHART

All D.C. voltages taken with a 1000 ohm per volt meter on the scale indicated in column headed "Meter Scale". Turn on the volume control all the way and connect the antenna and ground leads together. The grid, plate, and screen grid voltages are measured in outside of the heater tubes and in filament of the 215 tube.

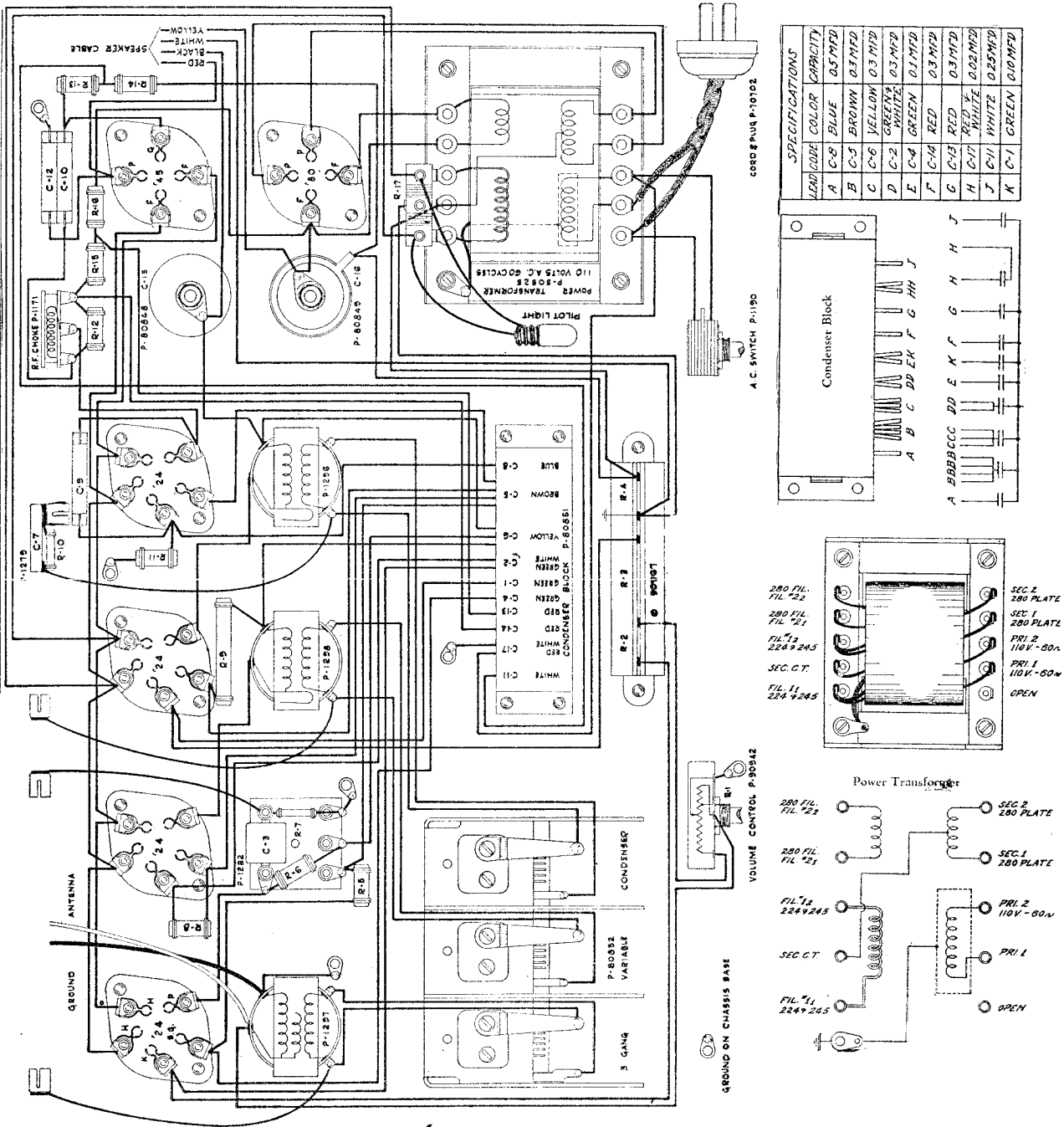
Tube	Current	Meter Scale	90 V.	100 V.	110 V.	120 V.	130 V.	140 V.
215	Grid	0-10	2	2.3	2.5	3	3.1	3.1
215	Screen Grid	0-10	74	75	81	88	94	94
224	Plate	0-250	113	142	175	187	178	178
224	Grid	0-10	4	5	6	7	8	8
224	Screen Grid	0-1000	60	67	72	78	81	81
224	Plate	0-1000	150	210	250	270	278	278
224	Grid	0-10	2	2.3	2.6	3	3.3	3.3
224	Screen Grid	0-1000	60	67	72	78	81	81
224	Plate	0-1000	150	210	250	270	278	278
Detector	Grid	0-10	78	96	111	111	112	112
224	Screen Grid	0-1000	65	74	81	88	94	94
224	Plate	0-1000	150	210	250	270	278	278
Audio	Grid	0-1000	23	27	31	35	40	40
280	Plate	0-1000	202	242	282	282	282	282
280	Rectifier	0-100	m.d.	45	50	56	64	64
280	Rectifier	0-1000	m.d.	m.d.	m.d.	m.d.	m.d.	m.d.
280	Rectifier	0-1000	265	298	310	318	318	318



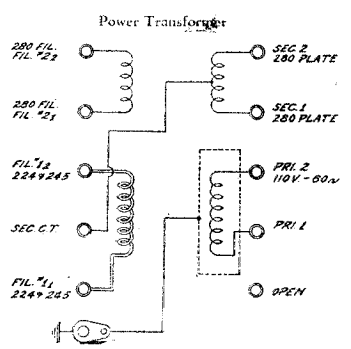
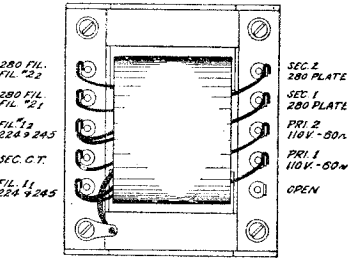
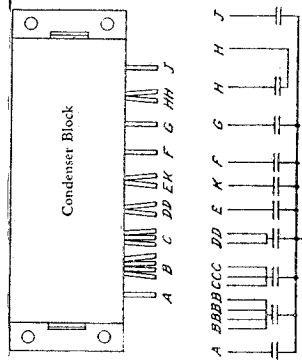
MODEL 60/63 SCHEMATIC WIRING DIAGRAM

MODEL 60, 63
Chassis

GULBRANSEN CO.



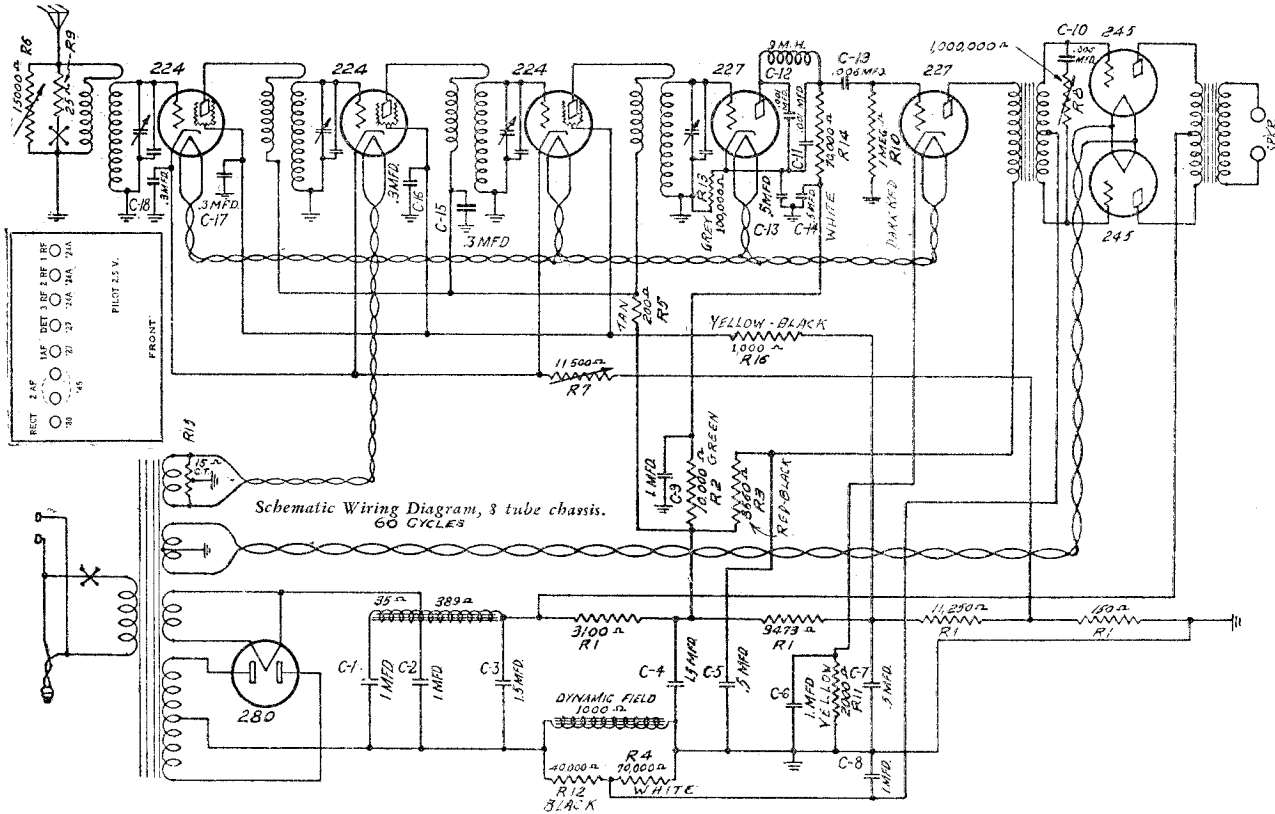
SPECIFICATIONS		
LOAD CODE	COLOR	CAPACITY
A	C-8 BLUE	0.5 MFD
B	C-3 BROWN	0.1 MFD
C	C-6 YELLOW	0.3 MFD
D	C-2 GREEN	0.3 MFD
E	C-4 WHITE	0.1 MFD
F	C-4 GREEN	0.1 MFD
G	C-3 RED	0.3 MFD
H	C-17 RED	0.02 MFD
J	C-11 WHITE	0.25 MFD
K	C-1 GREEN	0.10 MFD



GROUND ON CHASSIS BASE

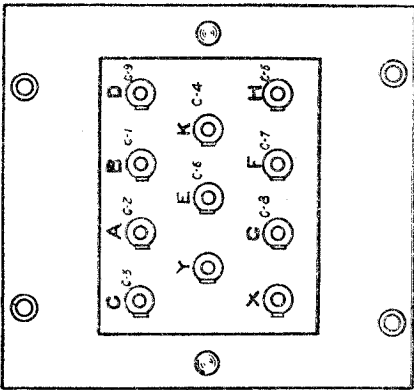
GULBRANSEN CO.

MODEL 160, 161
60 Cycles
Schematic-Data



Schematic Wiring Diagram, 3 tube chassis.
60 CYCLES

CODE	60 CYCLE	25 CYCLE
A	1.0 MF.C.2	2.5 MF.C.1
B	1.0 MF.C.1	4. MF.C.3
C	1.5 MF.C.3	10 MF.C.9
D	1.0 MF.C.9	10 MF.C.6
E	1.0 MF.C.6	0.5 MF.C.7
F	0.5 MF.C.7	15 MF.C.8
G	1.0 MF.C.8	0.5 MF.C.5
H	0.5 MF.C.5	2.0 MF.C.4
K	1.5 MF.C.4	COMMON
X	COMMON	COMMON
Y	COMMON	COMMON



Filter Condenser (60 and 25 cycle receivers).

FIXED CONDENSERS

Condensers C1 to C9 inclusive are in the filter block. C1, C2, C3, C4, and C7 are in the main filter circuits. C5 bypasses R3, which is the 8,660 ohm resistor in the first audio plate circuit. C6 by-passes R11, the cathode bias resistor on the first audio stage. C8 by-passes the grid bias on the 245 tubes, (obtained through R4 and R12) and C9 bypasses the 10,000 ohm resistor R2 in the detector plate circuit.

C10 and C19 are located on the resistor-condenser terminal strip (See Fig. 4) and are both .006 mfd. moulded condensers. C10 is in the tone control circuit, while C19 is the coupling condenser in the resistance coupled amplifier.

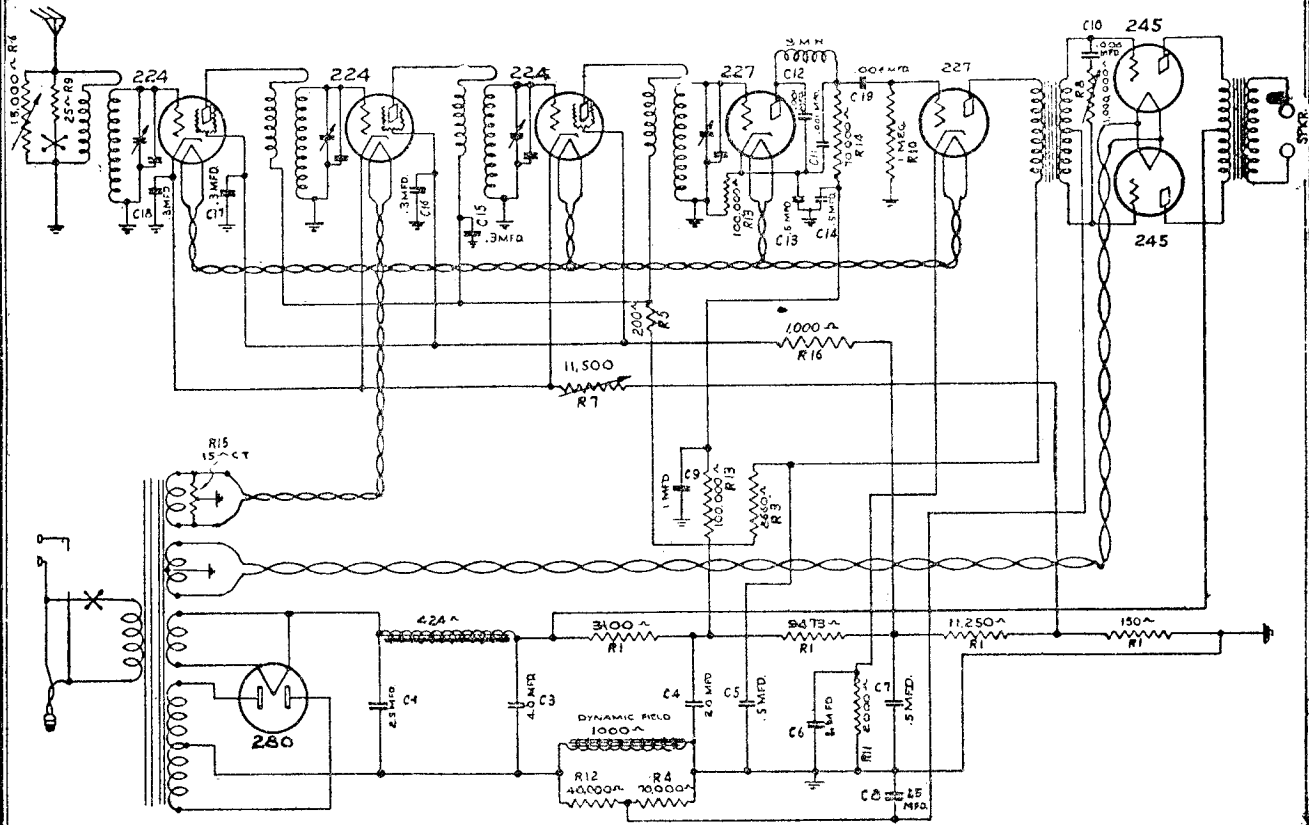
C11 and C12 are .001 mfd. moulded condensers, and are used in the detector plate circuit filter. C13 and C14 are the two units in the dual 1/2 mfd. by-pass condenser.

C15, C16 and C18 are located in the triple 3 mfd. condenser case. C17 is a single .3 mfd. condenser, and is mounted alongside of the triple 3 mfd. condenser case.

Code Fig. 1	Stock No.	Capacity
C1 to C9 inclusive	80818	9 Mfd. total. Filter block.
C10 and C19	80822	.006 Mfd. White paint spot.
C11 and C12	80821	.001 Mfd. Grey paint spot.
C13 and C14	80826	Dual .5 Mfd. Metal case.
C15, C16, C18	80817	Triple .3 Mfd. Metal case.
C17	80820	.3 Mfd. Metal case.

GULBRANSEN CO.

MODEL 160, 161
25 Cycles
Schematic
Voltage



Schematic Wiring Diagram, 25 Cycle Model.

The filter system of the 25-cycle chassis shown above is somewhat different than that in the 60-cycle chassis, and the detector plate circuit resistor has been changed from 10,000 ohms to 100,000 ohms.

All servicing data, with the exception of the tube voltages, is the same for both the 25 and 60-cycle chassis.

APPROXIMATE OPERATING VOLTAGES

A. C. LINE VOLTAGE—117. VOLUME CONTROL FULL ON

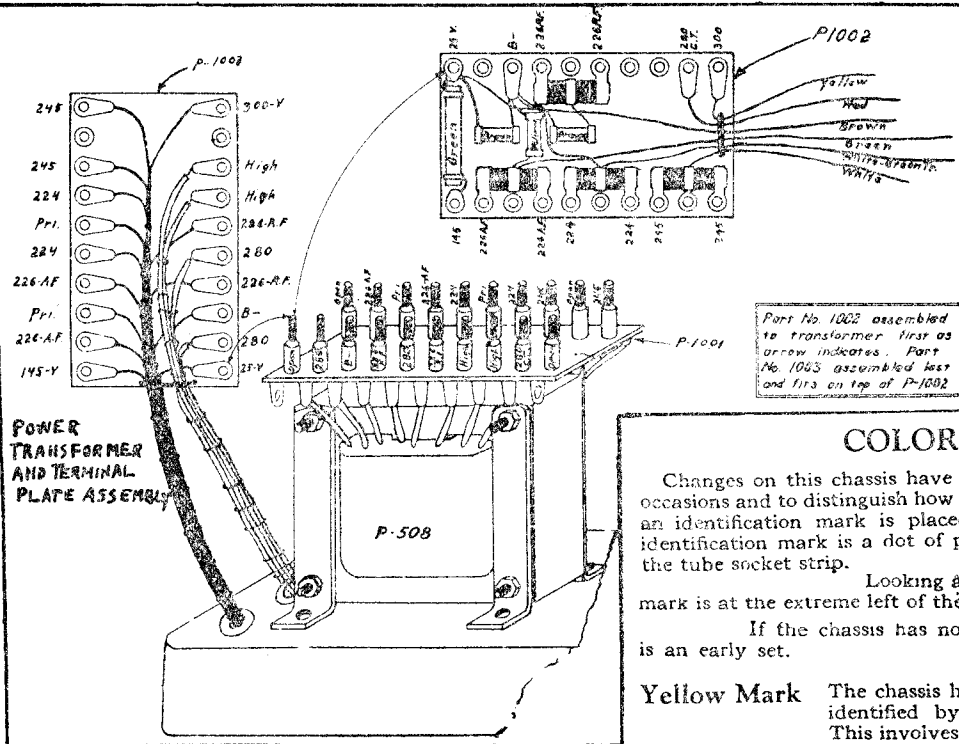
Tube	Position	Filament	Plate	Screen	Grid*	Cathode
224	1st R.F.	2.3	178	90	- 3.0*	3.0
224	2nd R.F.	2.3	178	90	- 3.0*	3.0
224	3rd R.F.	2.3	178	90	- 3.0*	3.0
227	Detector	2.3	100		-10.5*	10.5
227	1st Audio	2.3	130			9.0
245	2nd Audio	2.4	250		51.0	
245	2nd Audio	2.4	250		51.0	
280	Rectifier	4.7				

* Grid voltages on the 224 R.F. and 227 detector tubes are taken from grid to cathode and not from grid to ground. The grid voltage on the first audio tube is measured from cathode to ground.

GULBRANSEN CO.

MODEL 200, 291, 292
295, 9950

Voltage
Data



COLOR CODE

Changes on this chassis have been made on several different occasions and to distinguish how one chassis differs from another, an identification mark is placed on each one changed. This identification mark is a dot of paint found on the end rivet of the tube socket strip.

Looking at the chassis from the back the mark is at the extreme left of the 226 tube socket.

If the chassis has no mark it is understood that it is an early set.

Yellow Mark The chassis having the first changes may be identified by the yellow indicating mark. This involves four changes.

1. A "dual volume control" in place of the single type. The new volume control is made in two sections, with five lugs. The section nearest the chassis, having two lugs, operates exactly the same as the single volume control. The section behind the first, having three lugs, is placed in the first audio circuit to reduce the audio amplification and operates in tandem with the antenna volume control.

2. An interchange of position of the two audio transformers. The re-arrangement of the audio transformers has not altered their connections in the circuit.

3. An addition of a "dual half microfarad condenser" and two carbon resistors in the "B" circuit of the detector and first audio tubes. The 40,000 ohm black resistor with one section of the dual condenser is placed in the detector circuit (224) and the 15,000 ohm blue resistor with the other section of the dual condenser is placed in the first audio circuit (226). You will note that the yellow and blue leads in the cable connecting to the terminal strip have been interchanged.

4. A change in the location of the grounding of No. 1 lug on the condenser block. This lug is now grounded to the condenser case with a short piece of bare wire.

Red Mark
(Serial Number
39,000-42,999)

All chassis having a red mark on the rivet of the tube socket strip have all of the changes mentioned above and in addition, have a one-tenth microfarad condenser connected from ground to one

side of the 110 volt line. A peculiarity that may be experienced by the addition of this condenser is a loud hum on every station tuned in only when the antenna wire coming from the set is connected to ground. This can be eliminated by reversing the plug in the socket. Also be sure your antenna is not grounded, either by some other set being connected to your aerial or through any other means.

Green Mark
(Serial Number
43,000 and up)

All Chassis with a green mark on the rivet of the tube socket strip contain the above changes and in addition have a change in the "combination phonograph switch" circuit. This changed circuit makes use of only the audio system of the set for phonograph reproduction, whereas the original circuit included the detector tube

The Phonograph, Radio, On, and Off positions of the switch are the same as in the early sets. To obtain maximum volume and best tone quality a pick-up coupling transformer should be used to match the pick-up used.

OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
226	1st R.F.	1.35	116	8.5				4.7	8.7
226	2nd R.F.	1.35	116	8.5				4.7	8.7
226	3rd R.F.	1.35	116	8.5				4.7	8.7
226	4th R.F.	1.35	116	8.5				4.7	8.7
224	Det.	2.2	80	1.3	15				
226	1st A.F.	1.4	110	1.0				4.0	5.0
245	2nd A.F.	2.2	232	42				27	32
245	2nd A.F.	2.2	232	42				27	32
280	Rect.	4.6							84

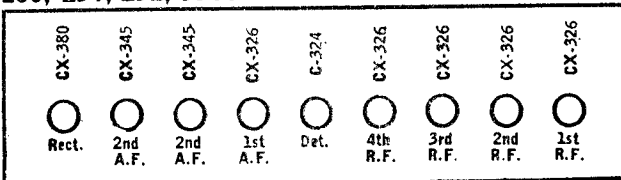
Line Voltage During Test—115 Volts

REVISION OF OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
224	Det.	2.2	75	1.3	15				
226	1st A.F.	1.4	77	1.0				4	5

200, 291, 292, 9950

(A.C.)



MODEL 200, 291, 292,
295, 9950

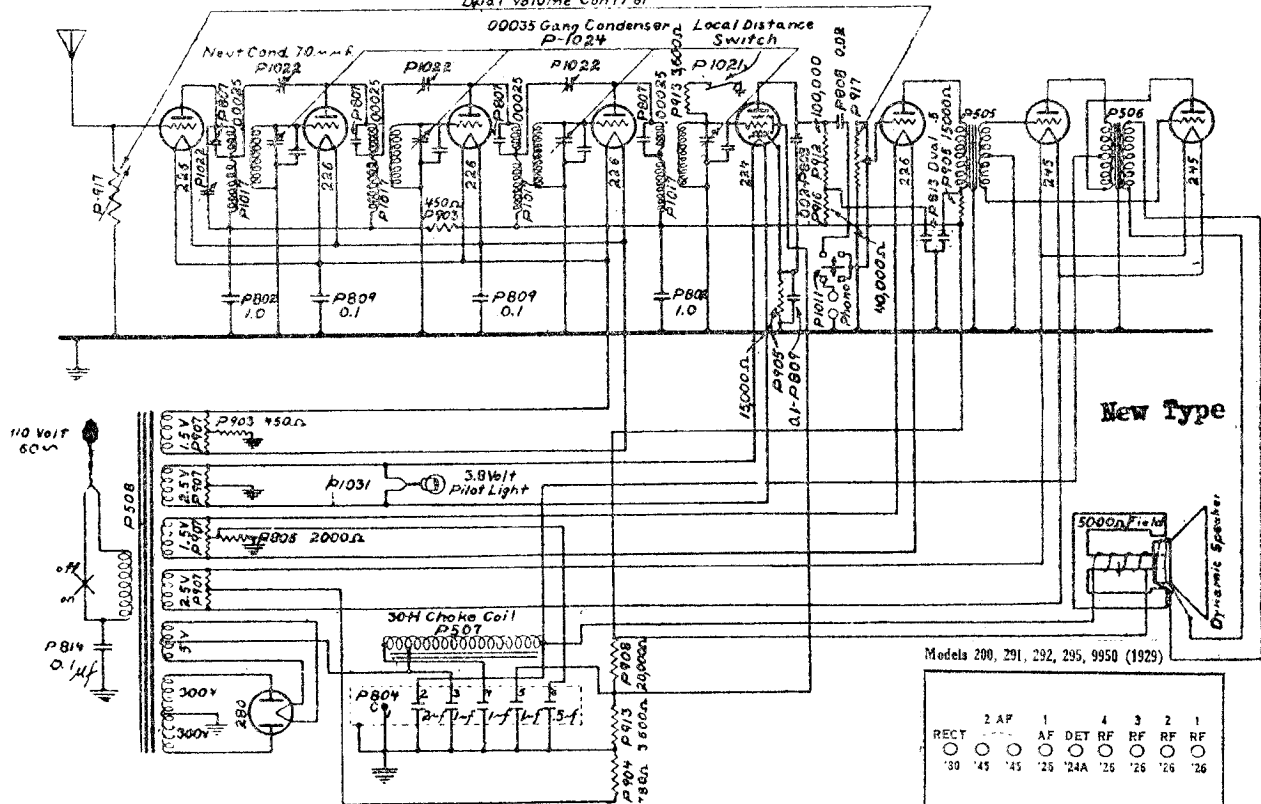
GULBRANSEN CO.

Schematic
Two Types

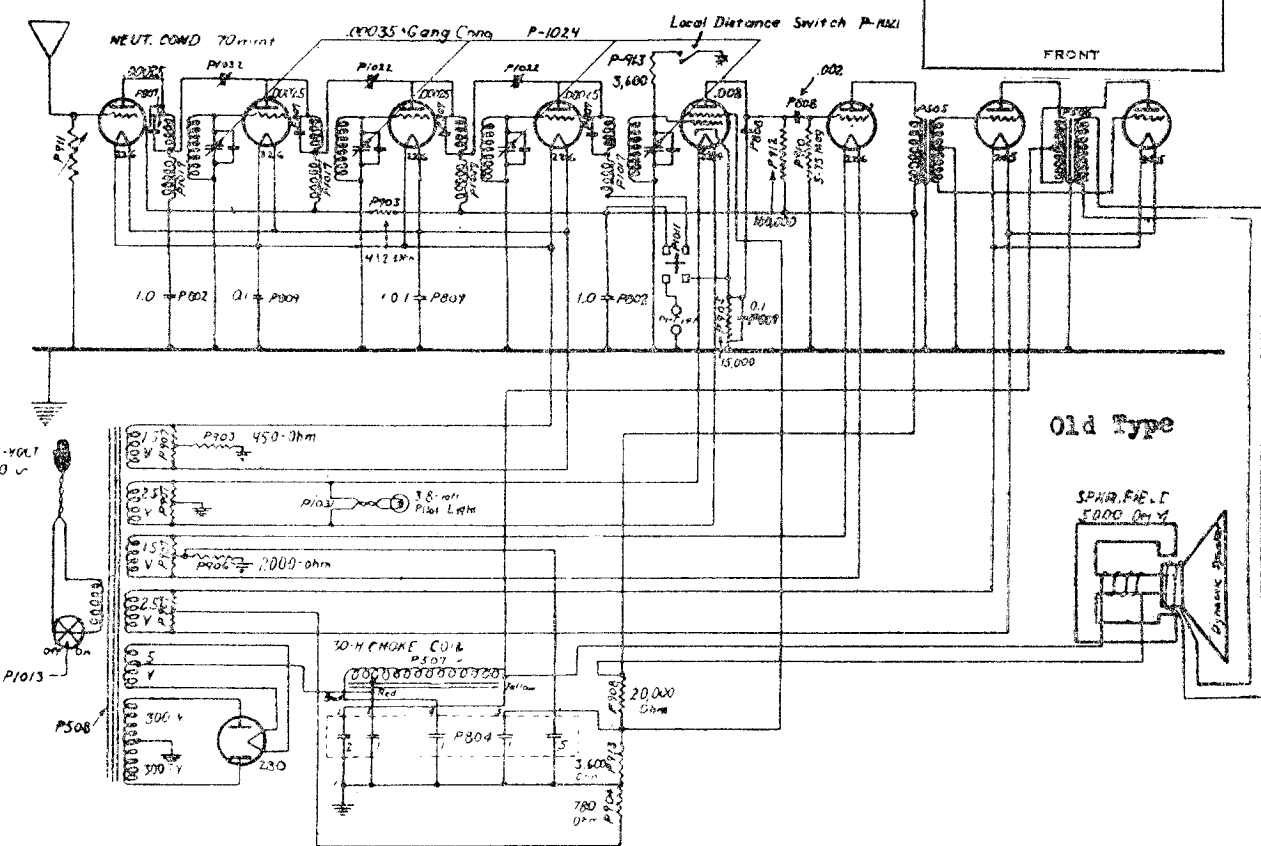
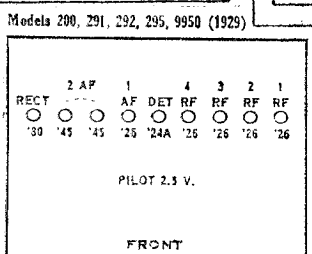
Dual Volume Control

00035 Gang Condenser P-1024

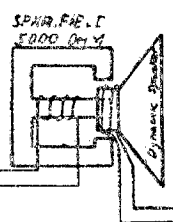
Local Distance Switch



New Type

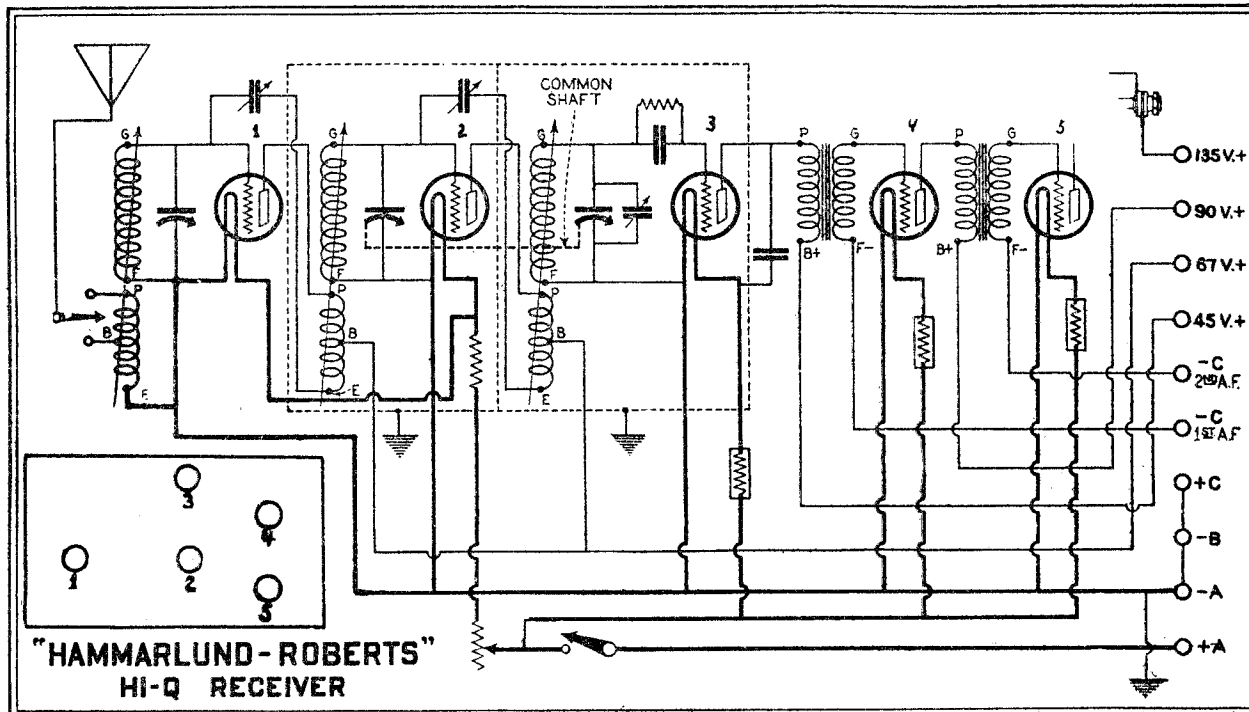
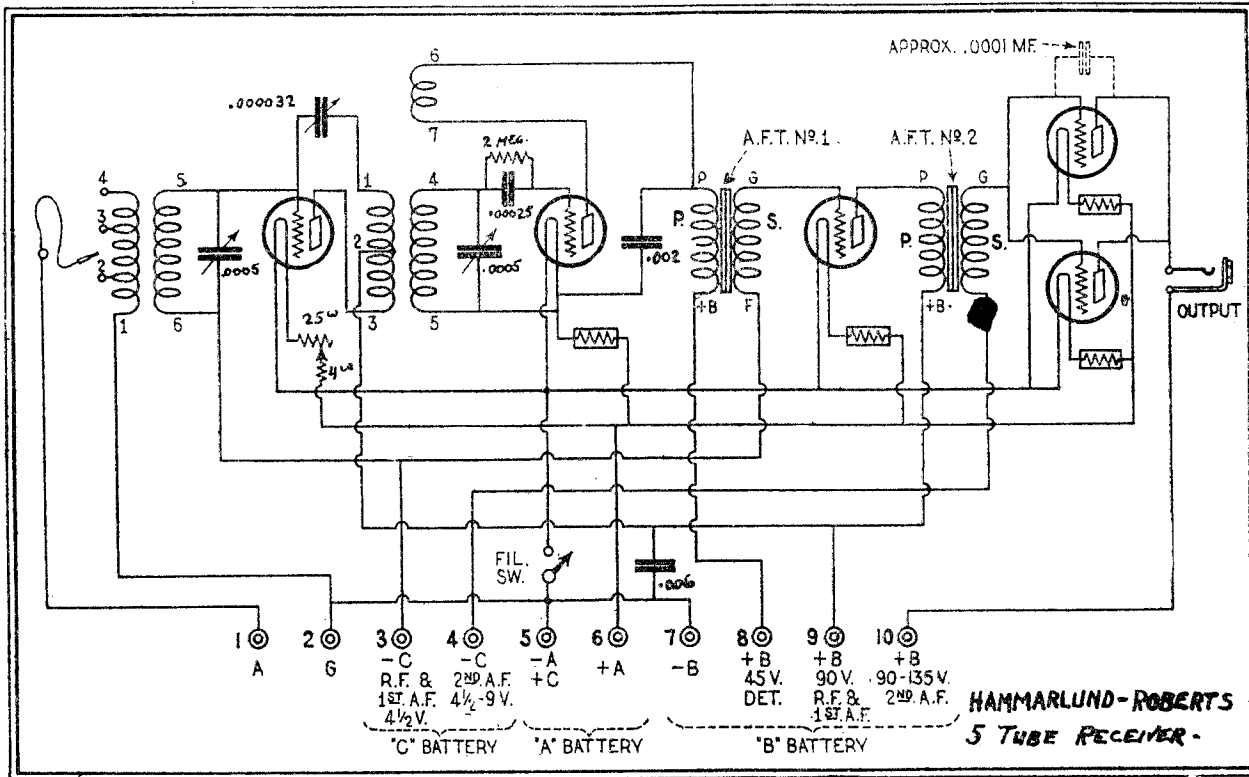


Old Type



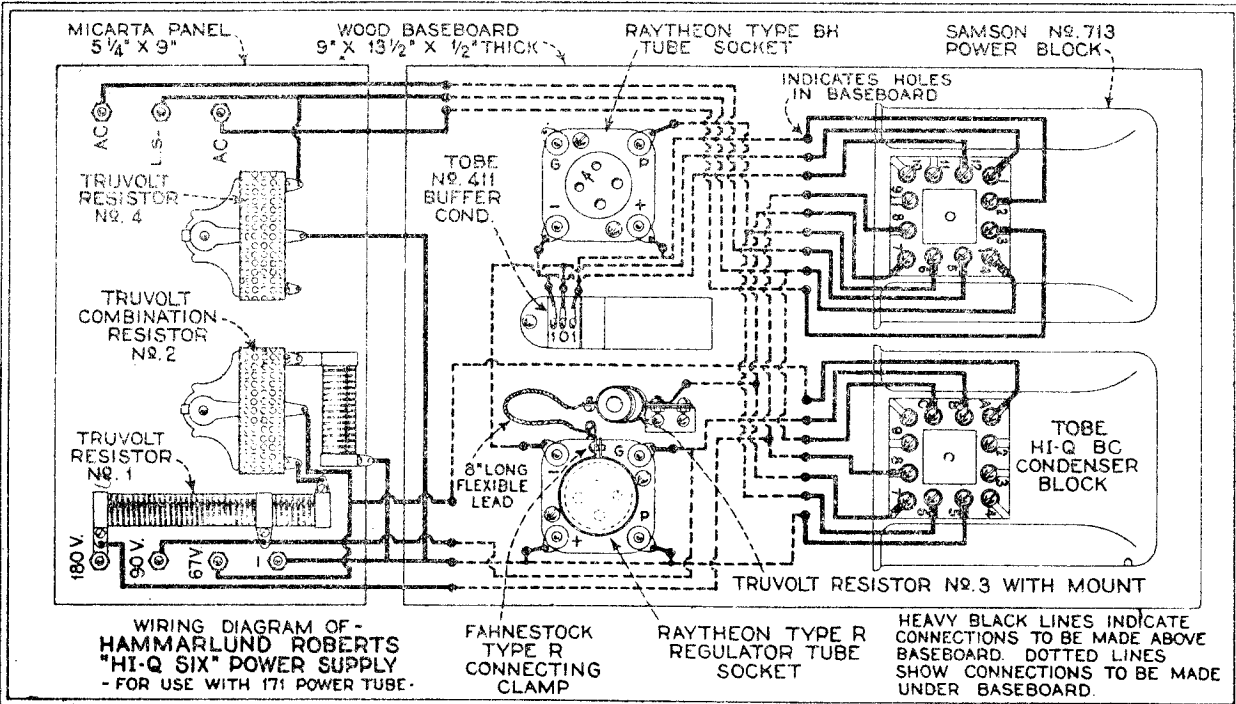
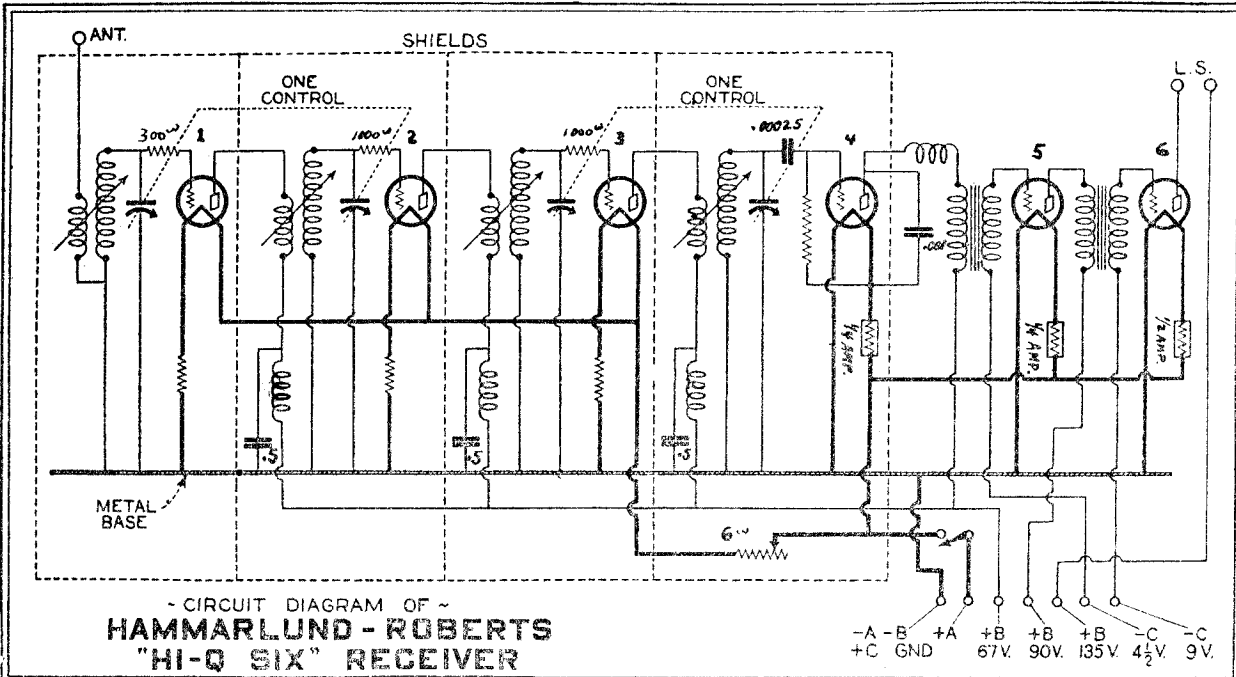
HAMMARLUND-ROBERTS, INC.

MODEL H-R 5 Tube
MODEL H-R "HI-Q"

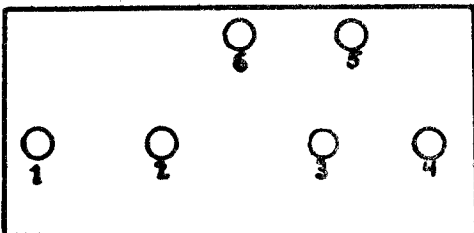


MODEL H-R "HI-Q" 6

HAMMARLUND-ROBERTS, INC.



SOCKET LAYOUT



Battery Cable

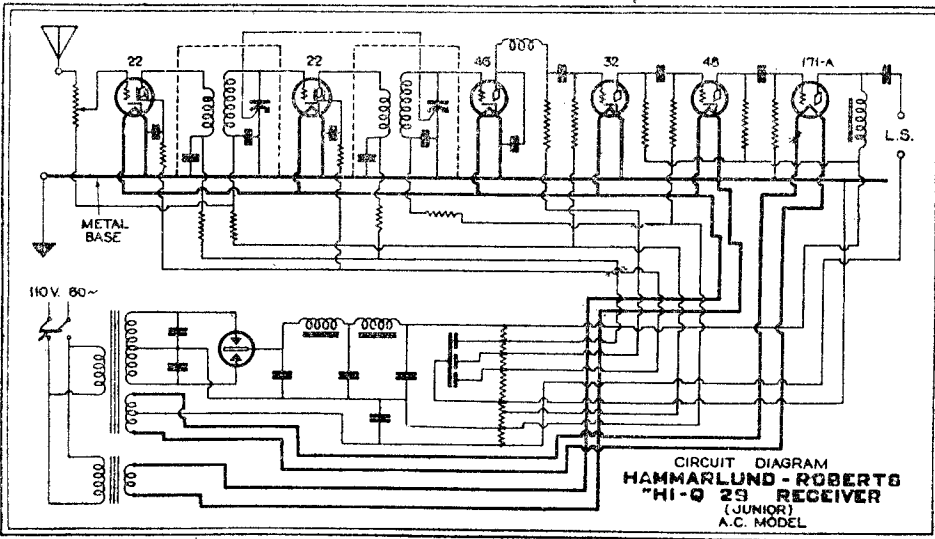
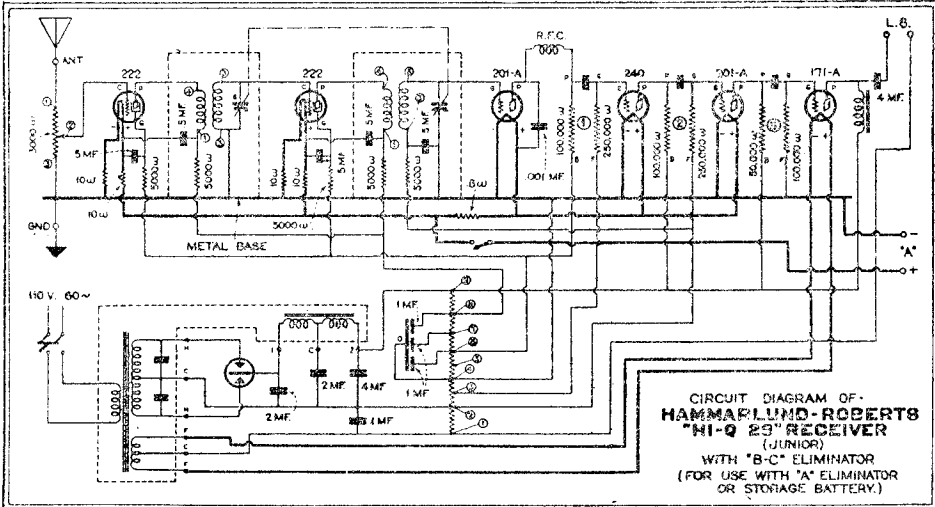
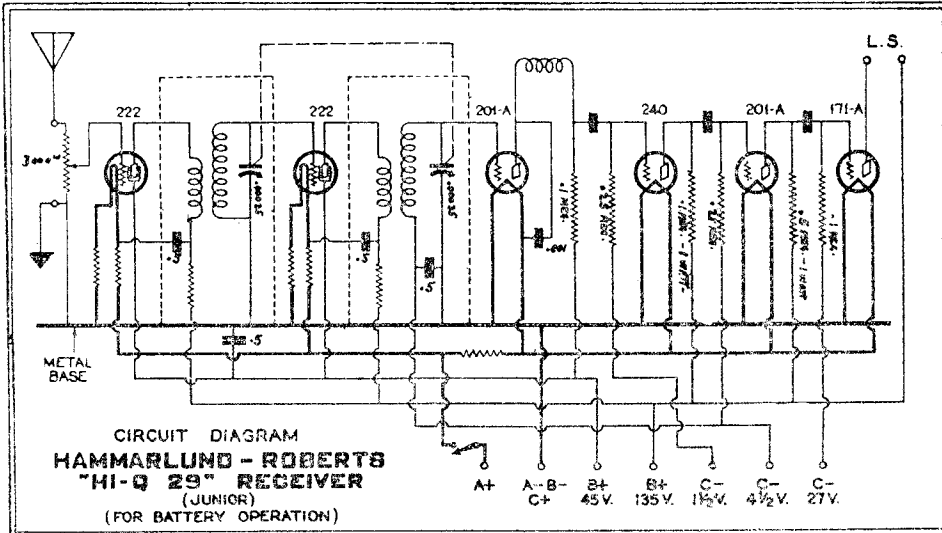
To B+	135	Gray
" B+	90	Yellow
" B+	67	Blue
" B-	C+	A- Black
" C-	4.5	Green
" C-	9.	Brown
" A+		Red

Power Cable

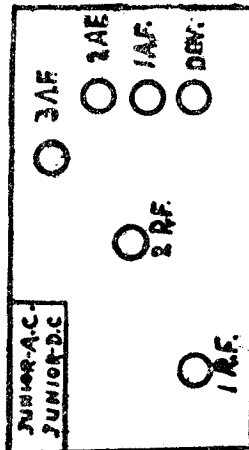
To B+	180	Gray
" B+	90	Yellow
" B+	67	Blue
" B-		Black
" C-		Green
" Fil. center tap		Brown

HAMMARLUND-ROBERTS, INC.

MODEL H-R "HI-Q" 29
Junior-Three Types

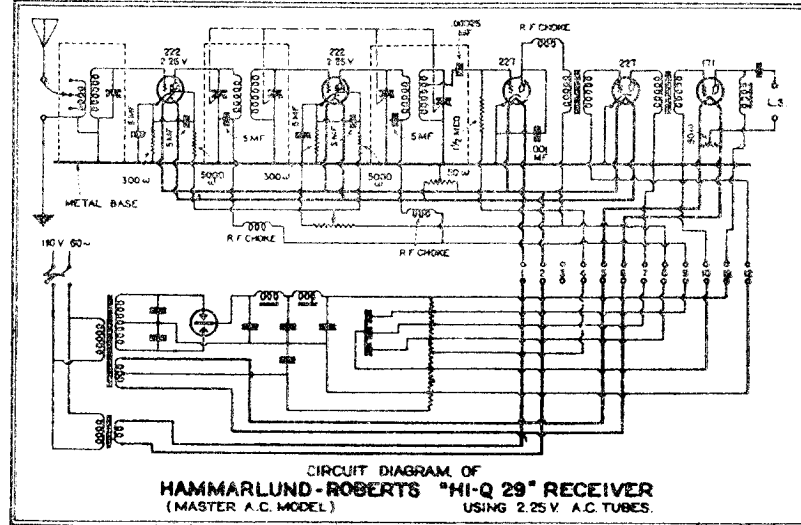
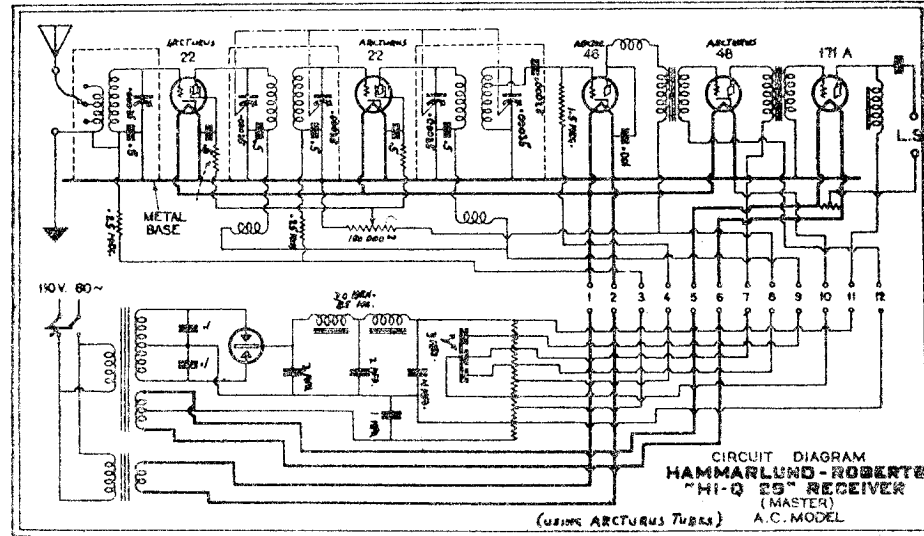
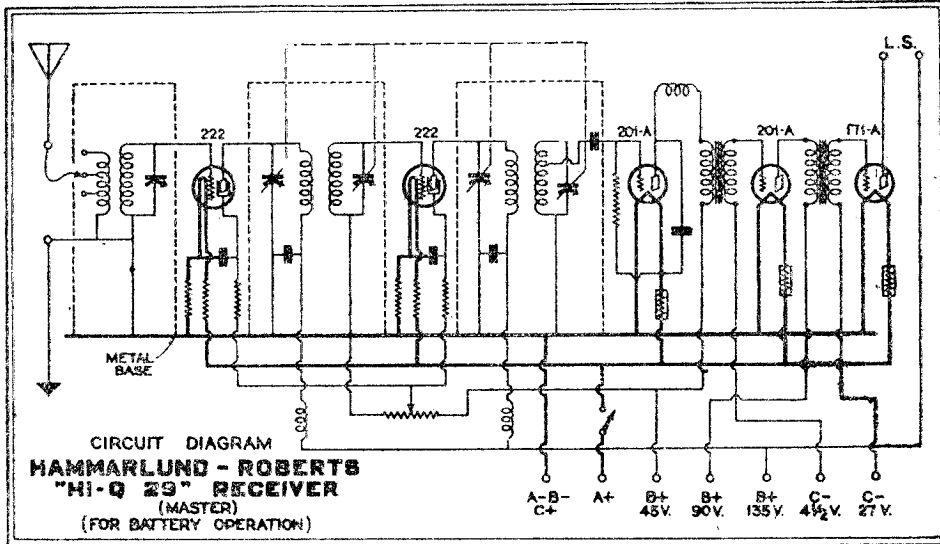


HI-Q 29 Jr. Battery cable.	
To B + 135	- Gray
" " B + 45	- Blue
" " B -	A -, C + Black
" " C + 1.5	Yellow
" " C - 4.5	Green
" " C - 27.	Brown
" " A +	Red

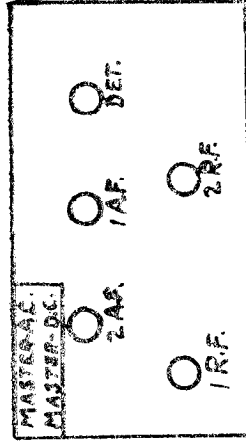


MODEL H-R "HI-Q" 29
Master-Three Types

HAMMARLUND-ROBERTS, INC.



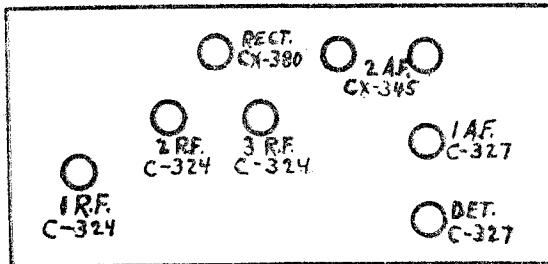
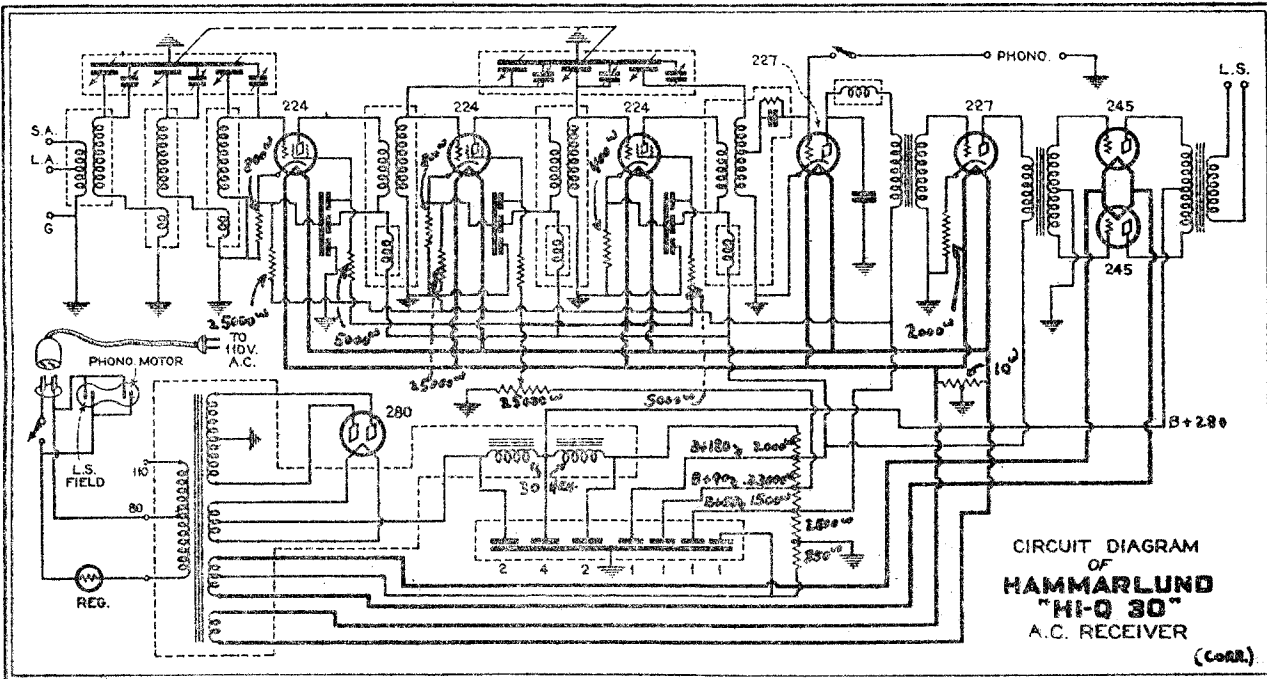
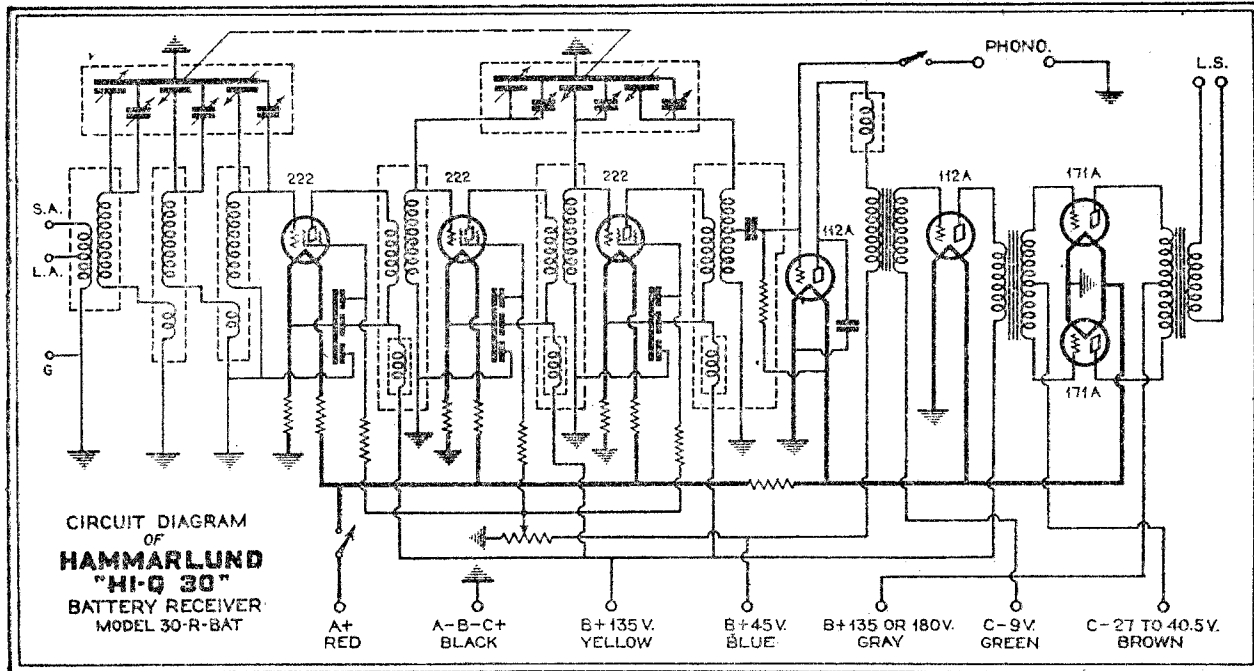
- MASTER A.C. - POWER CABLE
- 1-RED } 15V. A.C.
 - 2-BLACK } 15V. A.C.
 - 3-RED-GREEN TRACER. C- 1 VOLT
 - 4-BLACK-GREEN TRACER, C+ 4.5V
 - 5-RED-YELLOW TRACER } 5 V. A.C.
 - 6-BLACK YELLOW TRACER } 5 V. A.C.
 - 7-YELLOW, B+ 90V
 - 8-BLUE, B+ 45V.
 - 9-SLATE, B+ 135V
 - 10-GREEN, B-C+
 - 11-BROWN, B+ 180V
 - 12-WHITE, C-4.5V



- Master D.C. - Batt. cable.
- To B+ 135 Gray
 - " B+ 90 Yellow
 - " B+ 45 Blue
 - " B-, C+, A- Black
 - " C-, 4.5 Green
 - " C- Brown
 - " A+ Red

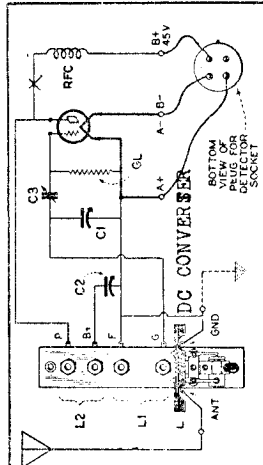
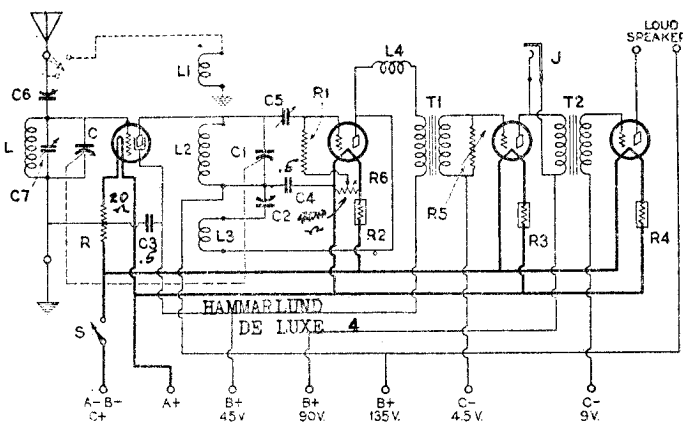
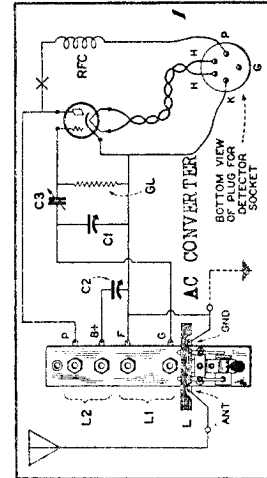
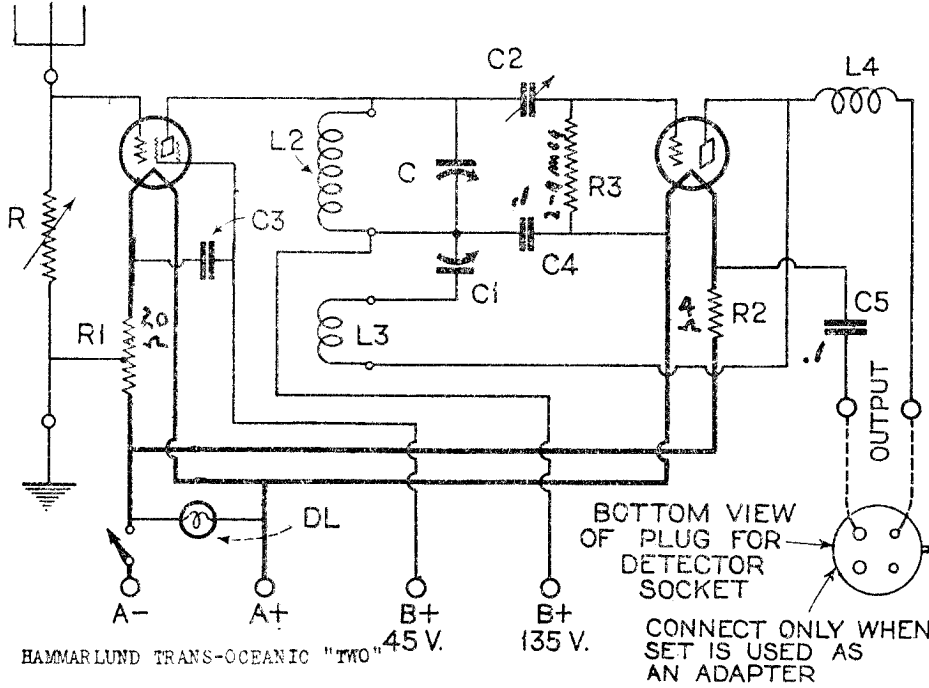
HAMMARLUND-ROBERTS, INC.

MODEL H-R "HI-Q" 30
A.C.-Battery



MODEL Hawk
 MODEL DeLuxe
 MODEL Z4 Commander
 MODEL Trans-Oceanic Two
 MODELS AC & DC Converters

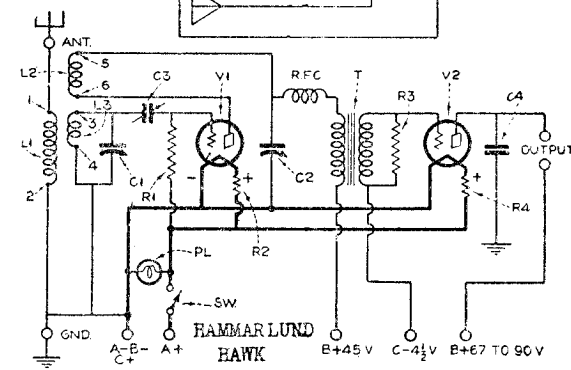
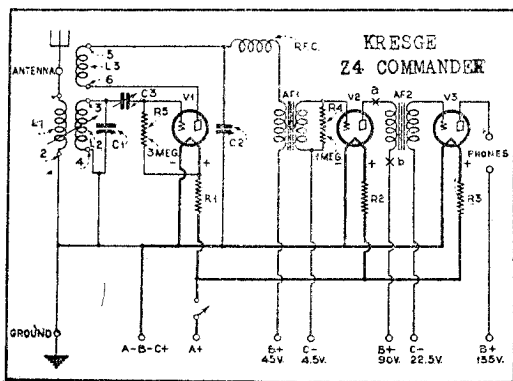
HAMMARLUND MFG. CO.



Coil Table

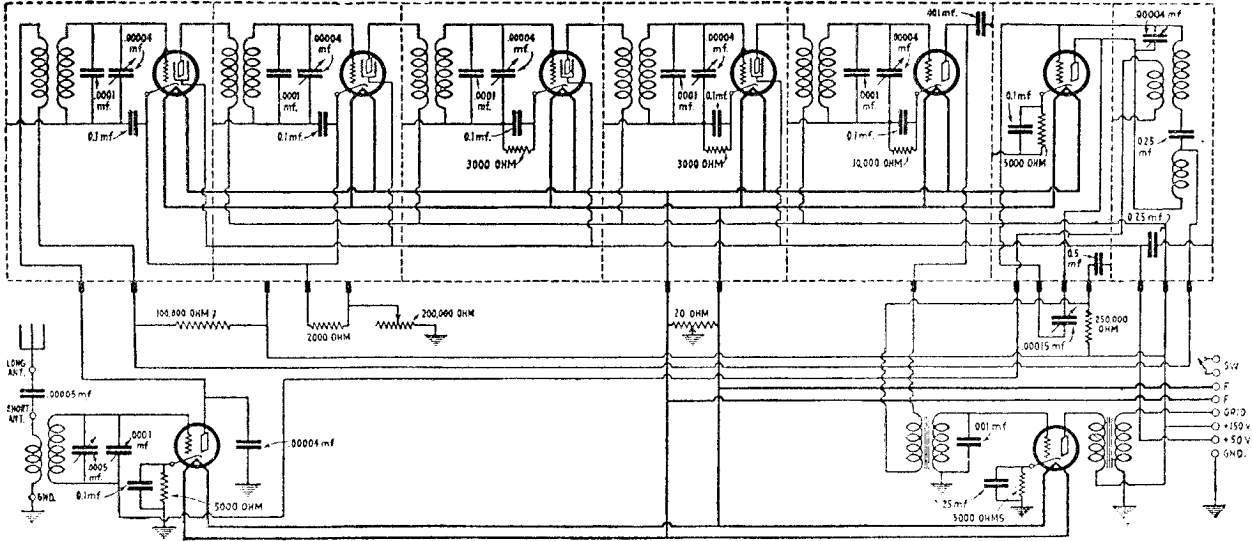
Wave Band (Meters)	Secondary Turns	Tickler Turns
14 to 24	3	3
22 to 40	7	5
36 to 65	15	6
60 to 110	24	12

HAMMARLUND HAWK

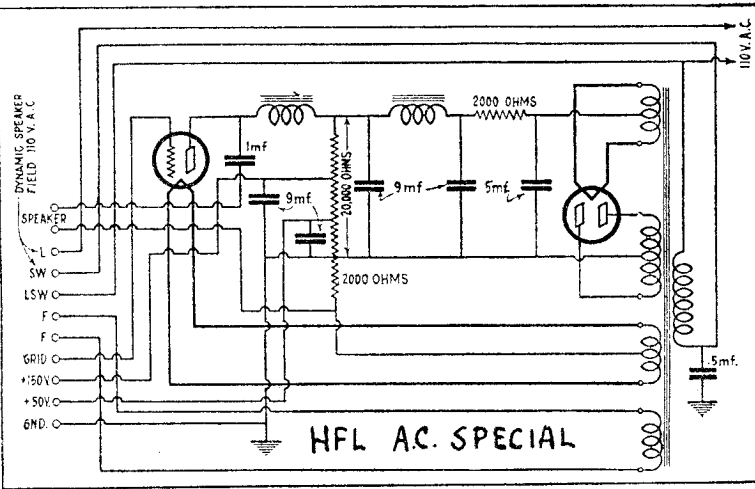


HIGH FREQUENCY LABORATORIES

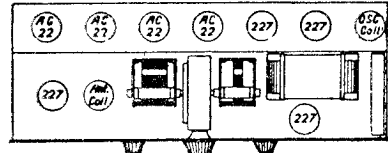
MODEL A.C. Special
MODEL 9-in-Line



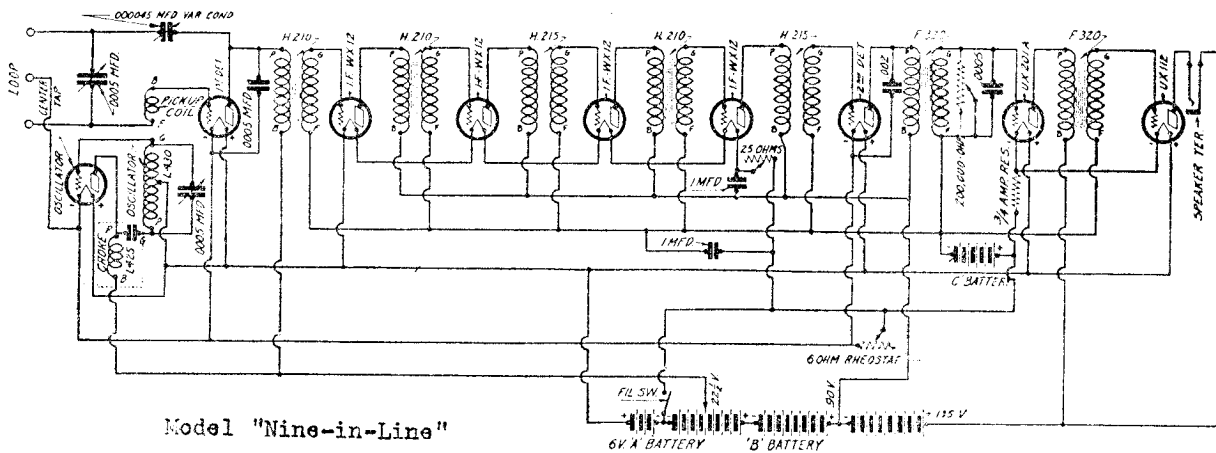
Model "A.C. Special"



HFL AC. SPECIAL



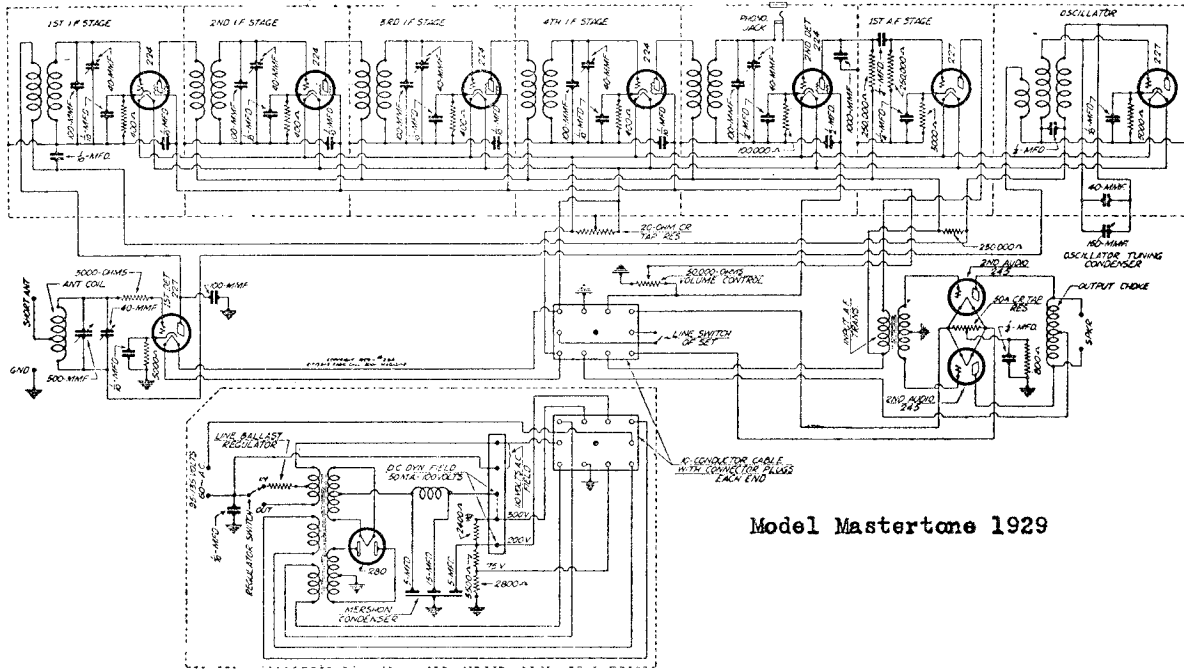
Tube layout showing position of respective tubes.



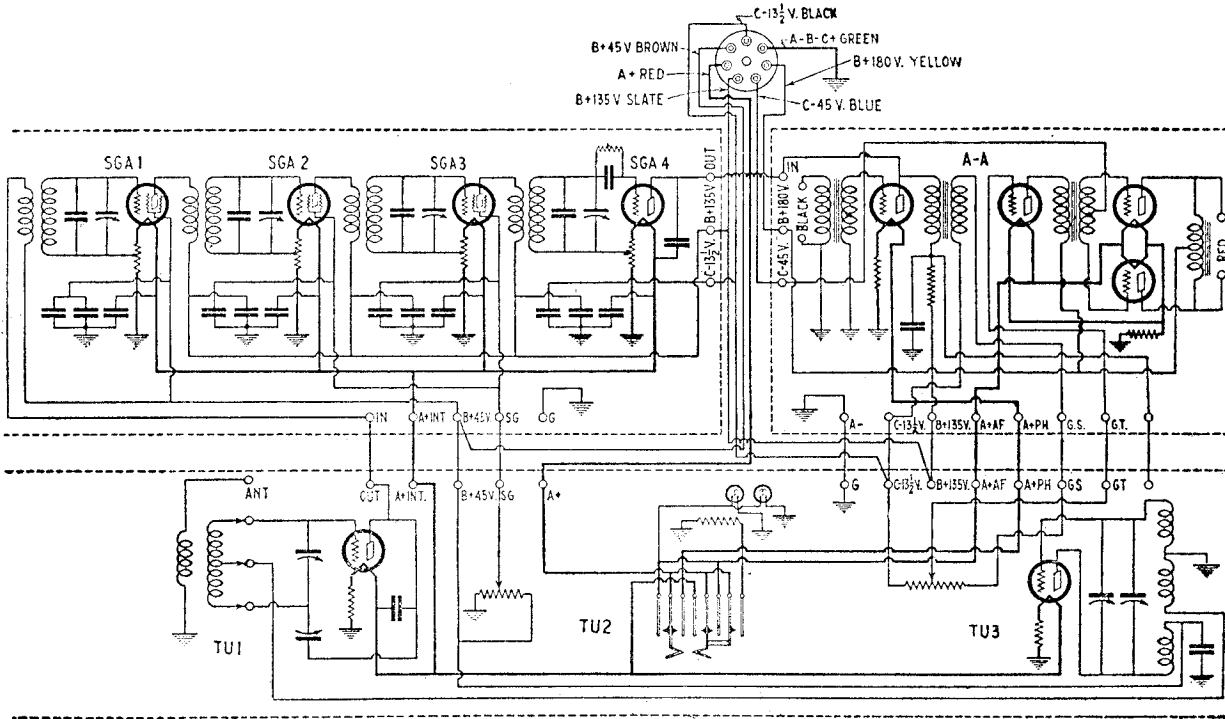
Model "Nine-in-Line"

MODEL Mastertone 1929
MODEL Isotone 10

HIGH FREQUENCY LABORATORIES



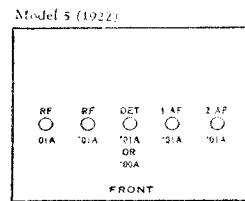
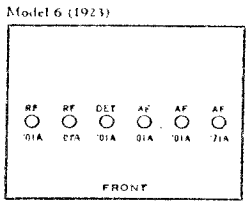
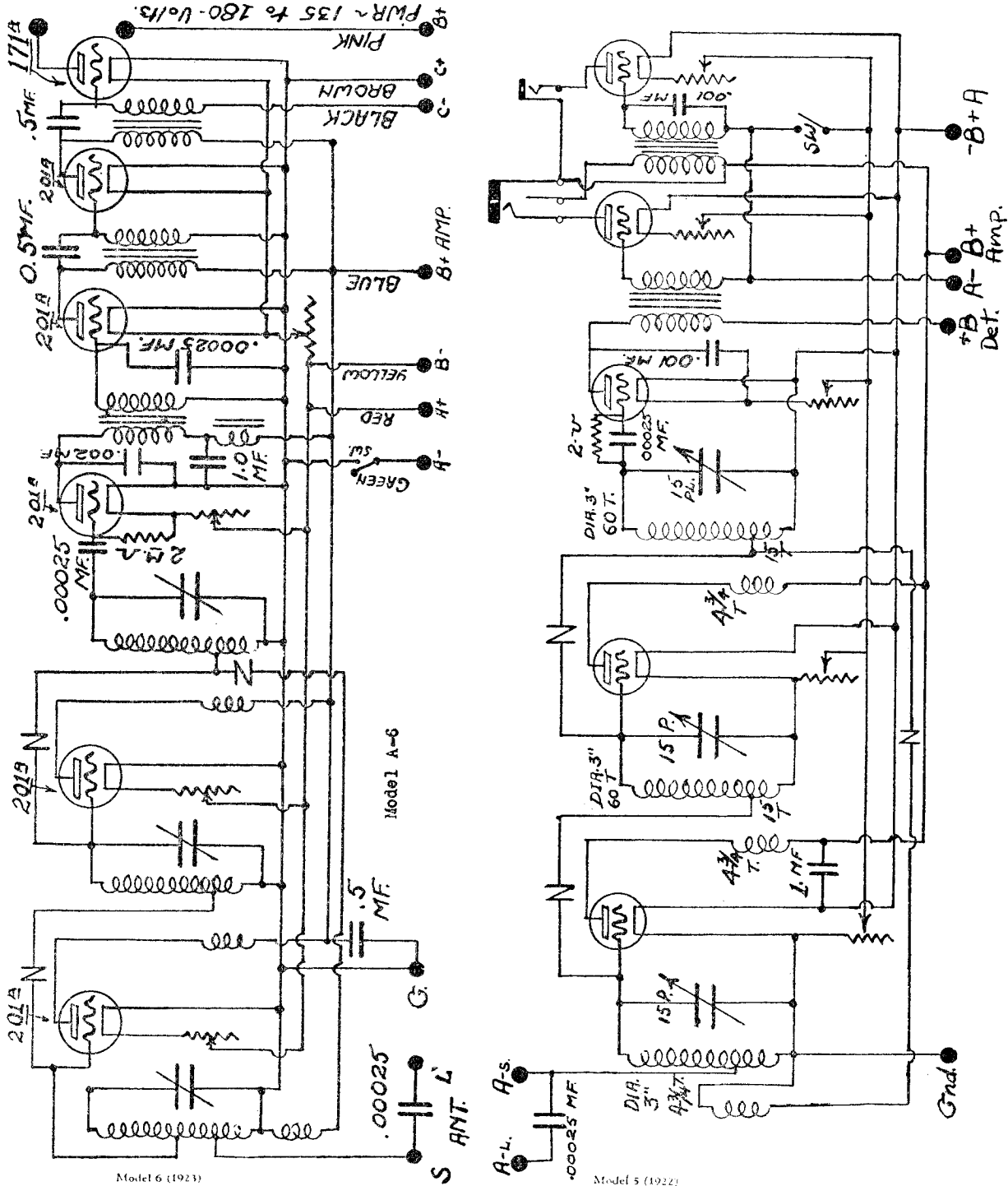
Model Mastertone 1929



Model Isotone 10

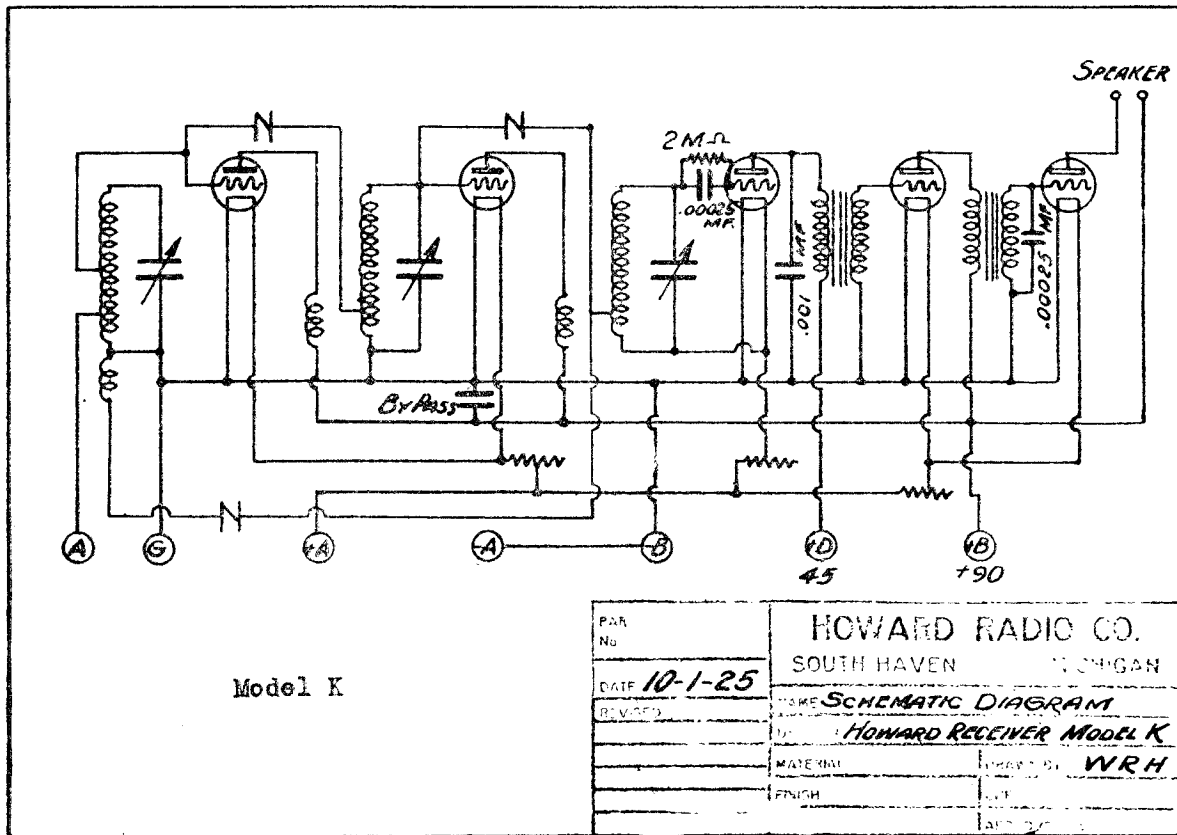
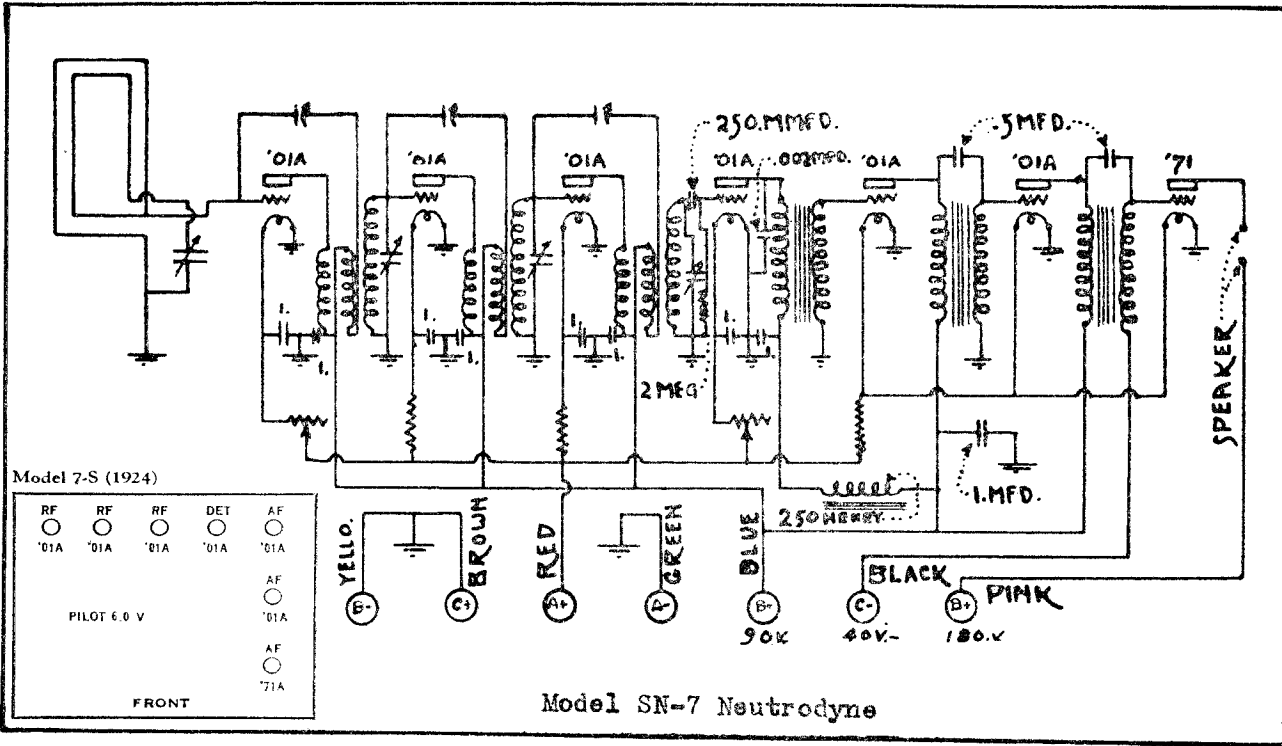
HOWARD RADIO CO.

MODEL A-5
MODEL A-6



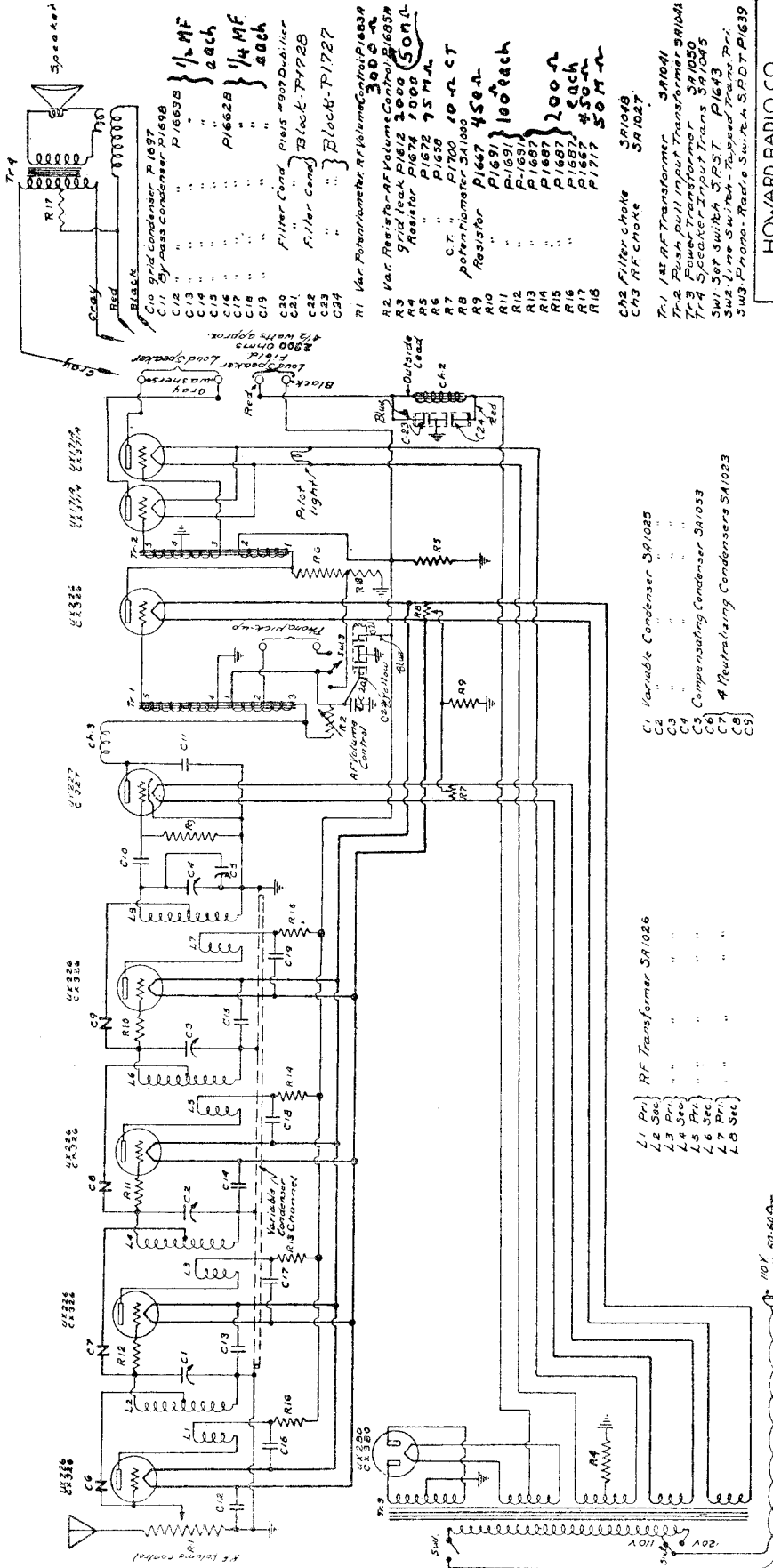
MODEL SN-7
MODEL K

HOWARD RADIO CO



MODEL Green Diamond 8
(Dyn. Spkr. '71)

HOWARD RADIO CO.



- Tr. 1 1st RF Transformer SA1041
- Tr. 2 Push Pull Output Transformer SA1041
- Tr. 3 Power Transformer SA1050
- SW1 Set Switch S.P.S.T. P1673 Par.
- SW2 Set Switch - Push Pull S.P.D.T. P1639
- SW3 Photo. Radiore Switch SA1039

- R1 Var. Potentiometer AF Volume Control P1634
- R2 Var. Potentiometer AF Volume Control P1634
- R3 Grid Leak P1674 300 Ohm (50 Ohm)
- R4 Resistor P1674 300 Ohm (50 Ohm)
- R5 Resistor P1672 75 M.A.
- R6 C.T. P1700 10 Ohm CT
- R7 potentiometer SA1050
- R8 Resistor P1667 450 Ohm
- R9 Resistor P1691 100 Ohm
- R10 Resistor P1691 100 Ohm
- R11 Resistor P1687
- R12 Resistor P1687
- R13 Resistor P1687
- R14 Resistor P1687
- R15 Resistor P1687
- R16 Resistor P1687
- R17 Resistor P1687
- R18 Resistor P1687

- C1 Variable Capacitor SA1025
- C2 " " " " " "
- C3 " " " " " "
- C4 Compensating Capacitor SA1053
- C5 Neutralizing Capacitor SA1023
- C6 " " " " " "
- C7 " " " " " "
- C8 " " " " " "
- C9 " " " " " "

- L1 1st RF Transformer SA1026
- L2 2nd " " " " " "
- L3 3rd " " " " " "
- L4 4th " " " " " "
- L5 5th " " " " " "
- L6 6th " " " " " "
- L7 7th " " " " " "
- L8 8th " " " " " "
- L9 9th " " " " " "

- Ch1 Filter Choke SA1027
- Ch2 Filter Choke SA1027
- Ch3 Filter Choke SA1027

- C10 Grid Condenser P1697
- C11 By Pass Condenser P1698
- C12 " " " " " "
- C13 " " " " " "
- C14 " " " " " "
- C15 " " " " " "
- C16 " " " " " "
- C17 " " " " " "
- C18 " " " " " "
- C19 " " " " " "

- Tr. 1 1st RF Transformer SA1041
- Tr. 2 Push Pull Output Transformer SA1041
- Tr. 3 Power Transformer SA1050
- SW1 Set Switch S.P.S.T. P1673 Par.
- SW2 Set Switch - Push Pull S.P.D.T. P1639
- SW3 Photo. Radiore Switch SA1039

HOWARD RADIO CO.
1119 N. PINE AVE. - CHICAGO, ILL.

Schematic Diagram
Model 8
DATE: 12-19-29
DWN: JHJ

W-1409-AB

(A.C.)

Green Diamond 8,

CX-326 CX-371A CX-371A CX-380

1st A.F. 2nd A.F. 3rd A.F. 4th A.F. Rect. Det.

CX-326 CX-326 CX-326 CX-326 CX-326 CX-326

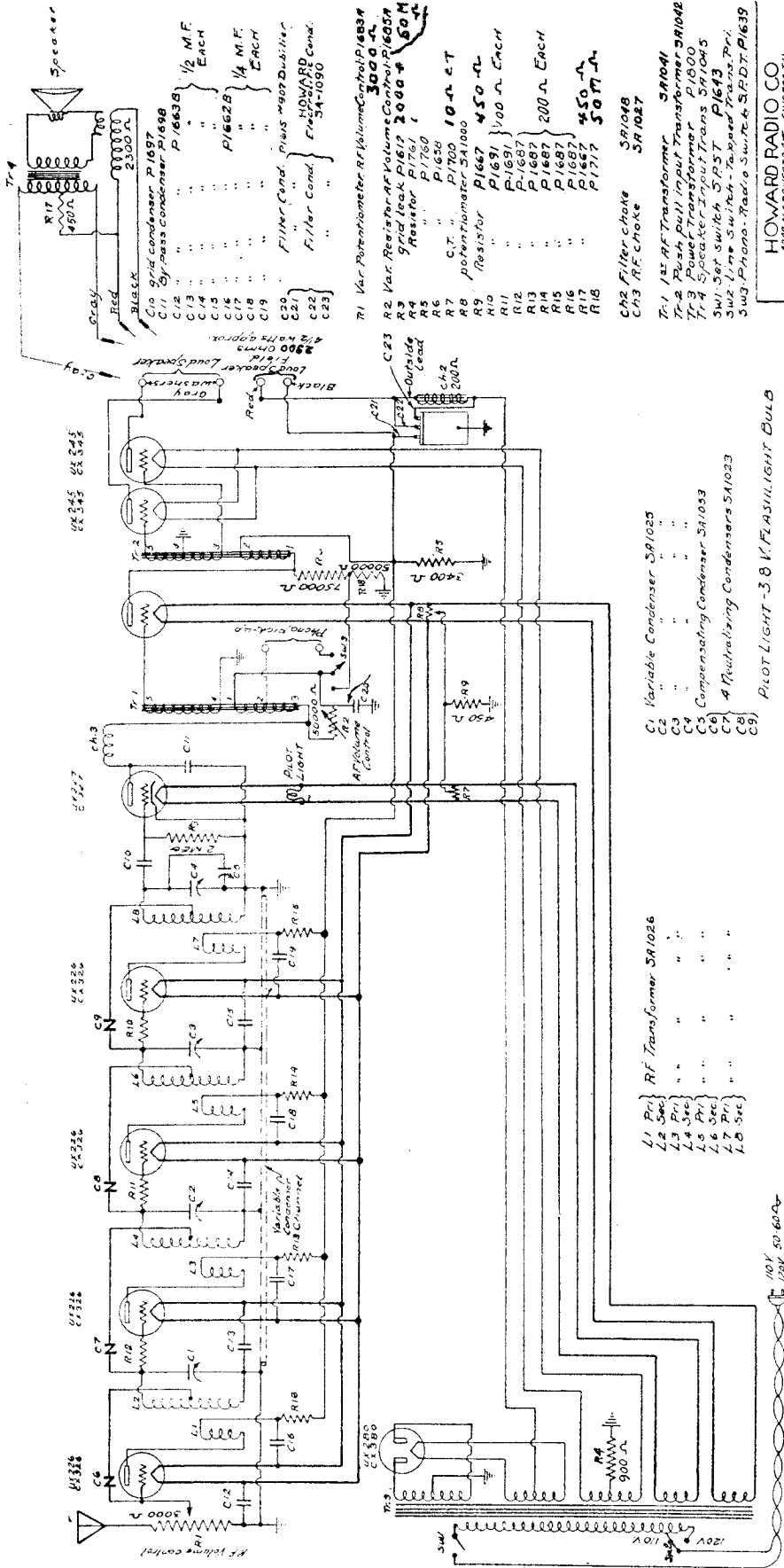
1st R.F. 2nd R.F. 3rd R.F. 4th R.F.

HOWARD—Green—Diamond 8
Line Voltage 115—2nd A. F. 2 Tubes—Push Pull

TUBE	TYPE OF TUBE	POSITION OF TUBE	TUBE OUT		TUBE IN TERTIARY		TUBE IN SOCKET OF SET		WAVE LENGTH	TUBE CHANGE
			A VOLTS	B VOLTS	CATHODE VOLTS	GRID VOLTS	A VOLTS	B VOLTS		
256	1st R.F.	1st A.F.	1.3	1.52	9	9	4.4	8.2	3.8	3.8
256	2nd R.F.	2nd A.F.	1.3	1.36	1.2	1.37	9	4.4	8.2	3.8
256	3rd R.F.	3rd A.F.	1.3	1.36	1.2	1.37	9	4.4	8.2	3.8
256	4th R.F.	4th A.F.	1.3	1.36	1.2	1.37	9	4.4	8.2	3.8
227	Det.	Det.	2.3	1.10	2.1	2.5	0	1.4	1.4	0.0
226	1st A.F.	1st A.F.	1.5	1.36	1.2	1.24	6	4.4	8.2	3.8
171	2nd A.F.	2nd A.F.	4.5	1.76	4.4	1.61	32	13	14	1.0
230	Rectifier	Rectifier	4.5	1.76	4.4	1.61	32	13	14	1.0
230	Rectifier	Rectifier	4.7	4.5	—	—	—	—	—	—

HOWARD RADIO CO

MODEL Green Diamond 8
(Dyn. Spkr. '45)



- R1 Var Potentiometer R.F. Volume Control P1633
- R2 Var Resistor AF Volume Control P1633 300 Ω
- R3 Grid Leak P1617 2000 Ω
- R4 Resistor P1760 50 M
- R5 " " P1760 "
- R6 " " P1638 "
- R7 C.T. " P1700 10 Ω C.T.
- R8 potentiometer SA1000
- R9 Resistor P1667 450 Ω
- R10 " P1691 100 Ω EACH
- R11 " P1687 "
- R12 " P1687 "
- R13 " P1687 "
- R14 " P1687 "
- R15 " P1687 "
- R16 " P1687 "
- R17 " P1777 450 Ω
- R18 " "
- CA2 Filter choke SA1048
- CA3 R.F. Choke SA1048
- Tr-1 12 AF Transformer SA1041
- Tr-2 Push pull Input Transformer SA1042
- Tr-3 Power Transformer P1800
- Tr-4 Speaker Input Trans SA1045
- SW1 Set Switch SRST P1643
- SW2 Line Switch-Tapped Trans Pri.
- SW3 Phone-Radio Switch SRDT P1639

HOWARD RADIO CO
489 N. CANTON ST. CHICAGO, ILL.
Schematic Diagram Type
Revised Green Diamond Model 8
DATE - 12-19-28
DW-743 W-1409-E

REVISED 7-9-29 (A.C.)

Green Diamond 8, Type SH

6X-326	6X-345	6X-245	6X-380	6X-326	6X-326	6X-326	6X-326	6X-326	6X-326
1st A.F.	2nd A.F.	2nd A.F.	Rect.	1st R.F.	2nd R.F.	3rd R.F.	4th R.F.	1st R.F.	2nd R.F.
C-327	Del.	CX-326	CX-326	CX-326	CX-326	CX-326	CX-326	CX-326	CX-326

HOWARD—Model SH-245
Line Voltage 120—Set on High Volt Tap—Volume Control Position No Change

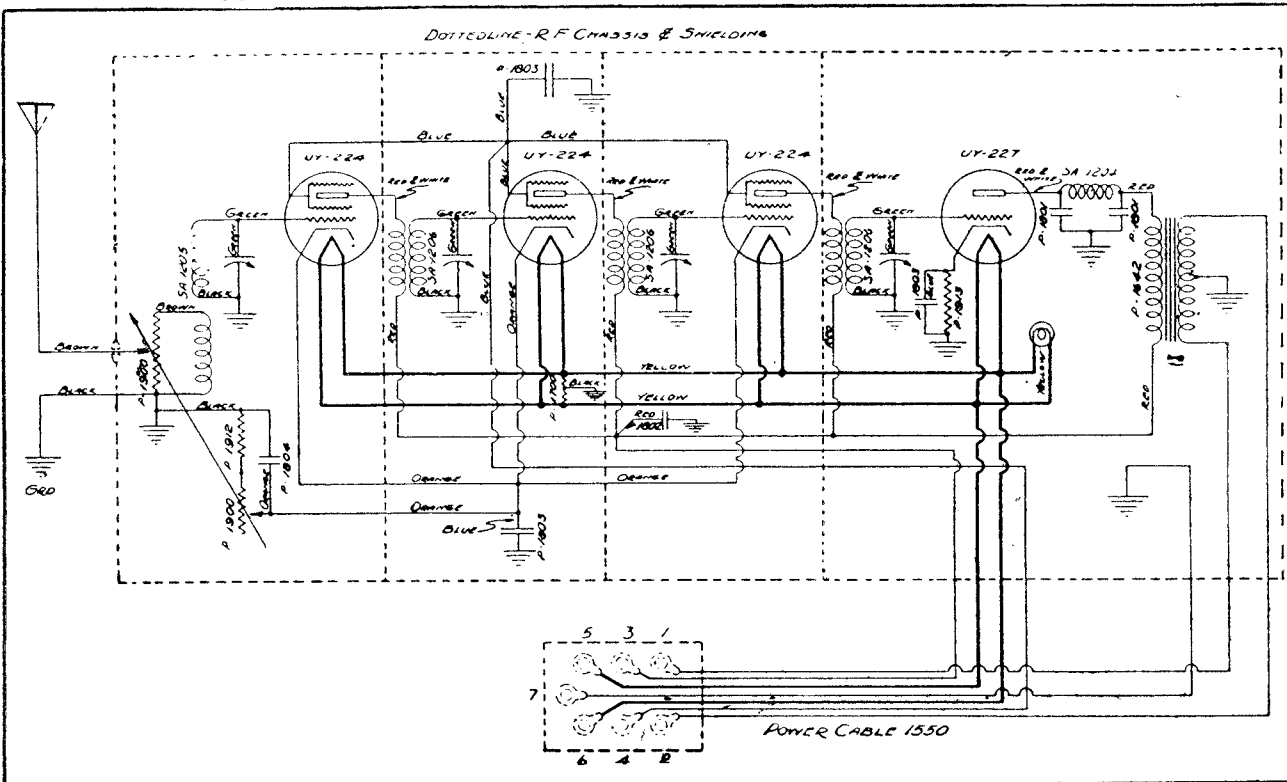
TUBE ORDER	TYPE	POSITION	READINGS PLUG IN SOCKET OF SET				TUBE IN TESTER				
			TUBE OUT	TUBE IN	PLATE	SCREEN	VOLTS	MA	VOLTS	MA	
1	250	Rect.	-	-	4.8	-	-	1.00	-	-	-
2	255	1st AF	1.4	1.20	1.35	116	8	-	4.5	7.5	3
3	255	2nd AF	1.4	1.20	1.35	116	8	-	4.5	7.5	3
4	255	3rd AF	1.35	1.20	1.3	116	8	-	4.5	7.5	3
5	255	4th AF	1.35	1.20	1.3	116	8	-	4.5	7.5	3
6	227	Det.	2.25	44	2.1	20	-	-	4.8	-	-
7	225	1st A.	1.35	1.20	1.3	116	8	-	2.2	5.4	3.2
8	245	2nd A.	2.2	245	2.1	235	36	-	22	26	9
9	245	2nd A.	2.2	245	2.1	235	36	-	22	26	4

- L1 Pri } RF Transformer SA1026
- L2 Sec
- L3 Pri
- L4 Sec
- L5 Pri
- L6 Sec
- L7 Pri
- L8 Sec

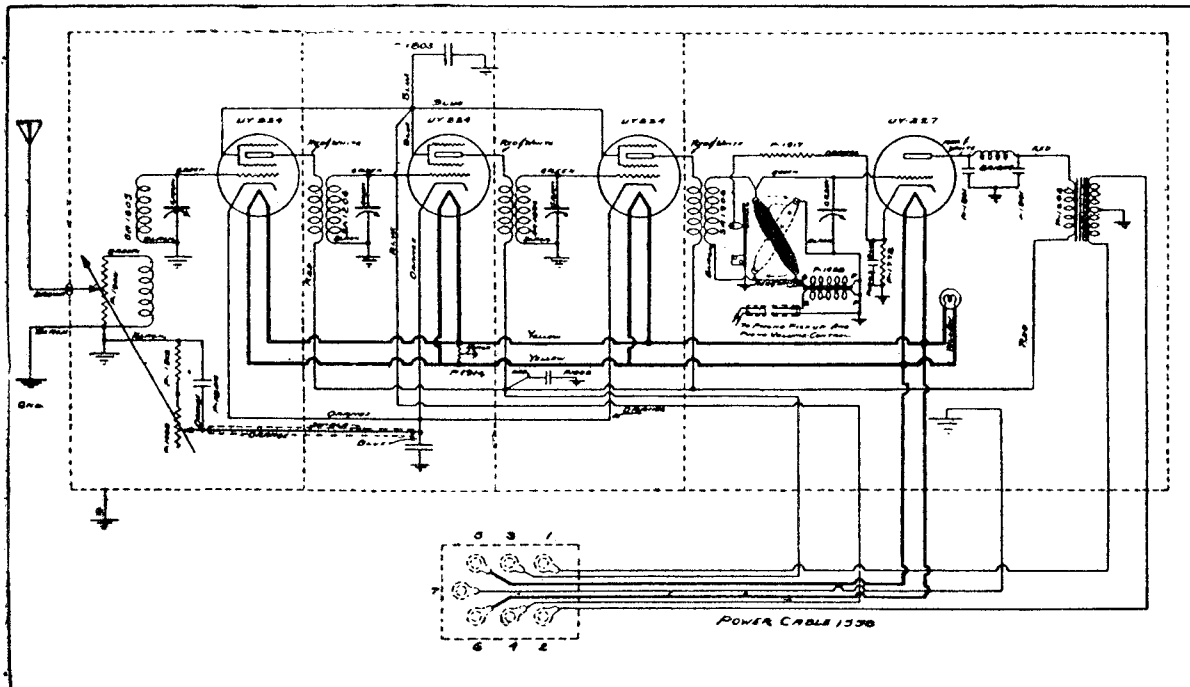
110V 50-60Hz

MODEL SG "A"
RF Chassis
MODEL SG "C"
RF Chassis

HOWARD RADIO CO.



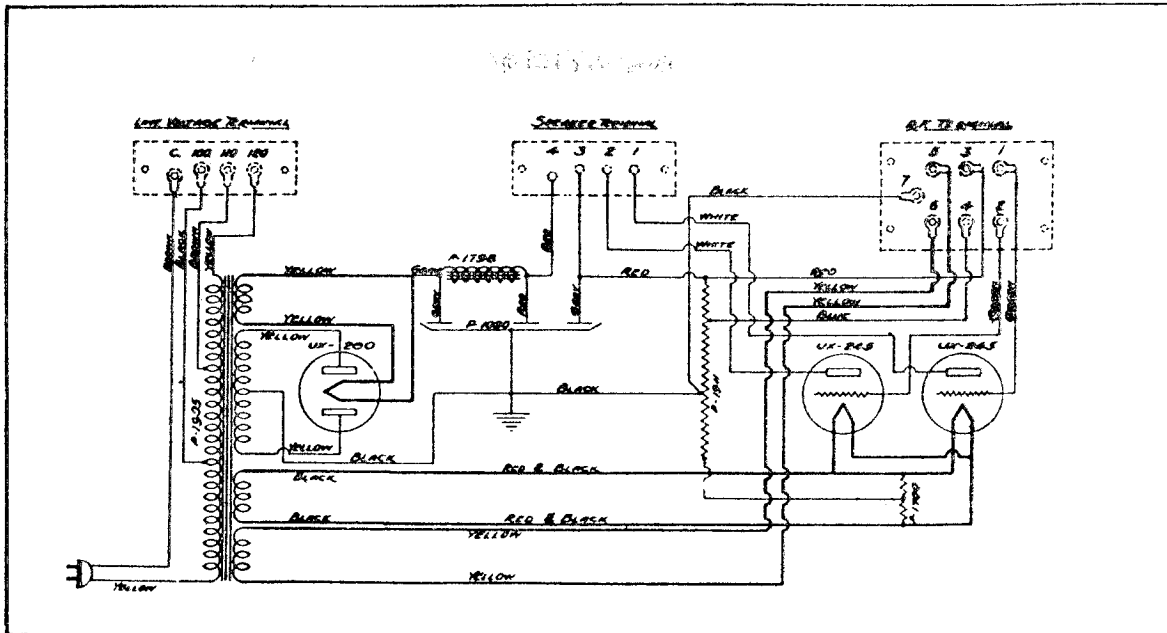
R.F. Chassis Model S.G. "A"



R.F. Chassis Model S.G. "C"

HOWARD RADIO CO

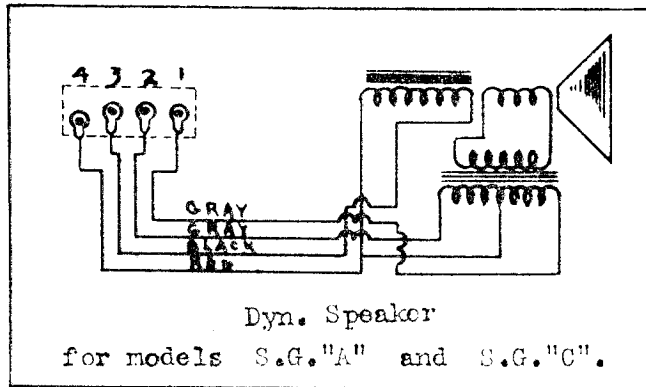
MODEL SG"A"
AF Chassis
MODEL SG"C"
AF Chassis
Voltage



Power Unit and A.F. Amplifier for HOWARD Models S.G. "A" and S.G. "C"

R.F. Chassis Term. Plate.

- 1 Gray Audio Grid
- 2 Gray Audio Grid
- 3 Red B + 175 Volts
- 4 Blue B + 70 "
- 5 Yellow Fil. 2.25 "
- 6 Yellow Fil. 2.25 "
- 7 Black B - Ground



Dyn. Speaker
for models S.G. "A" and S.G. "C".

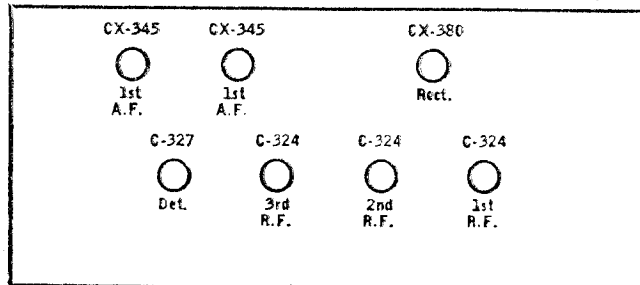
HOWARD RADIO—Model A—Screen Grid
Line Voltage 110—Set on 110 Volt Tap
Volume Control Position Max

*Detector Plate Voltage on Phone Combination

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST P.F. DEY. ETC.	READINGS, PLUG IN SOCKET OF SET										
			TUBE OUT				TUBE IN TESTER				PLATE W.A. GRID CHANGE		SCREEN GRID VOLTS
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONTROL B. GRID)	CATHODE HEATER PLATE VOLTS	NORMAL PLATE W.A.	TEST W.A.	W.A.	W.A.	
1	224	1 R.F.	2.40	171	2.26	164	2.7	1.9	3.3	4.3	1.0	64	
2	224	2 R.F.	2.40	171	2.26	164	2.7	1.9	3.3	4.3	1.0	64	
3	224	3 R.F.	2.40	171	2.26	164	2.7	1.9	3.3	4.3	1.0	64	
4	227	DET.	2.45	161	2.32	*150	15.1X	11.6	1.1	1.4	0.3	-	
5	245	P. P.	2.33	272	2.21	251	47.0	-	26	30	4.0	-	
6	245	P. P.	2.33	272	2.21	251	47.0	-	26	30	4.0	-	
7	280	Rect.	5.64	-	4.65	-	-	-	64	-	-	-	

SG-A

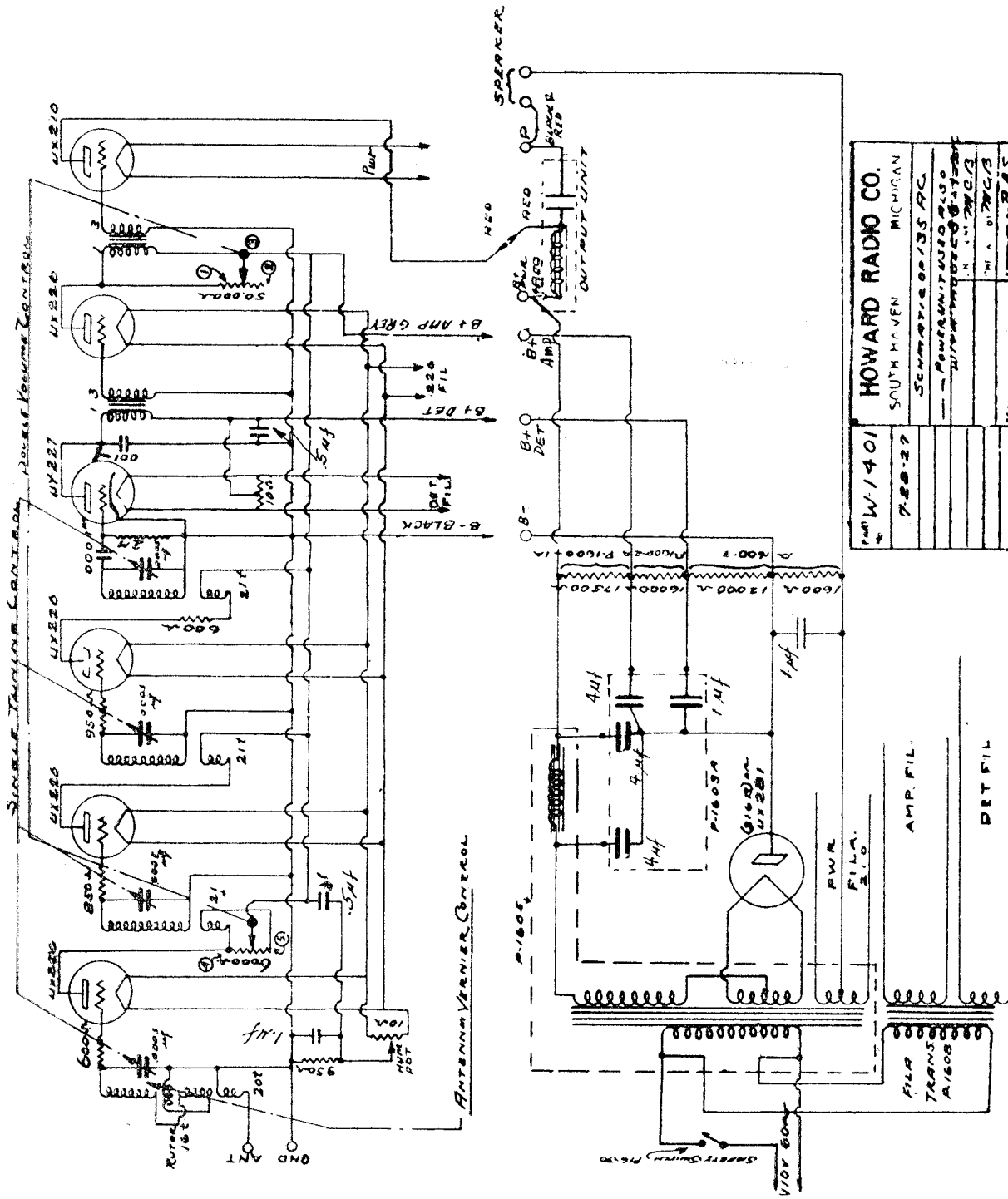
(A.C.)



*Detector coil shorted to give correct voltage when measuring detector

MODEL 395, 445, 470, 495
(135-AC Chassis)

HOWARD RADIO CO.

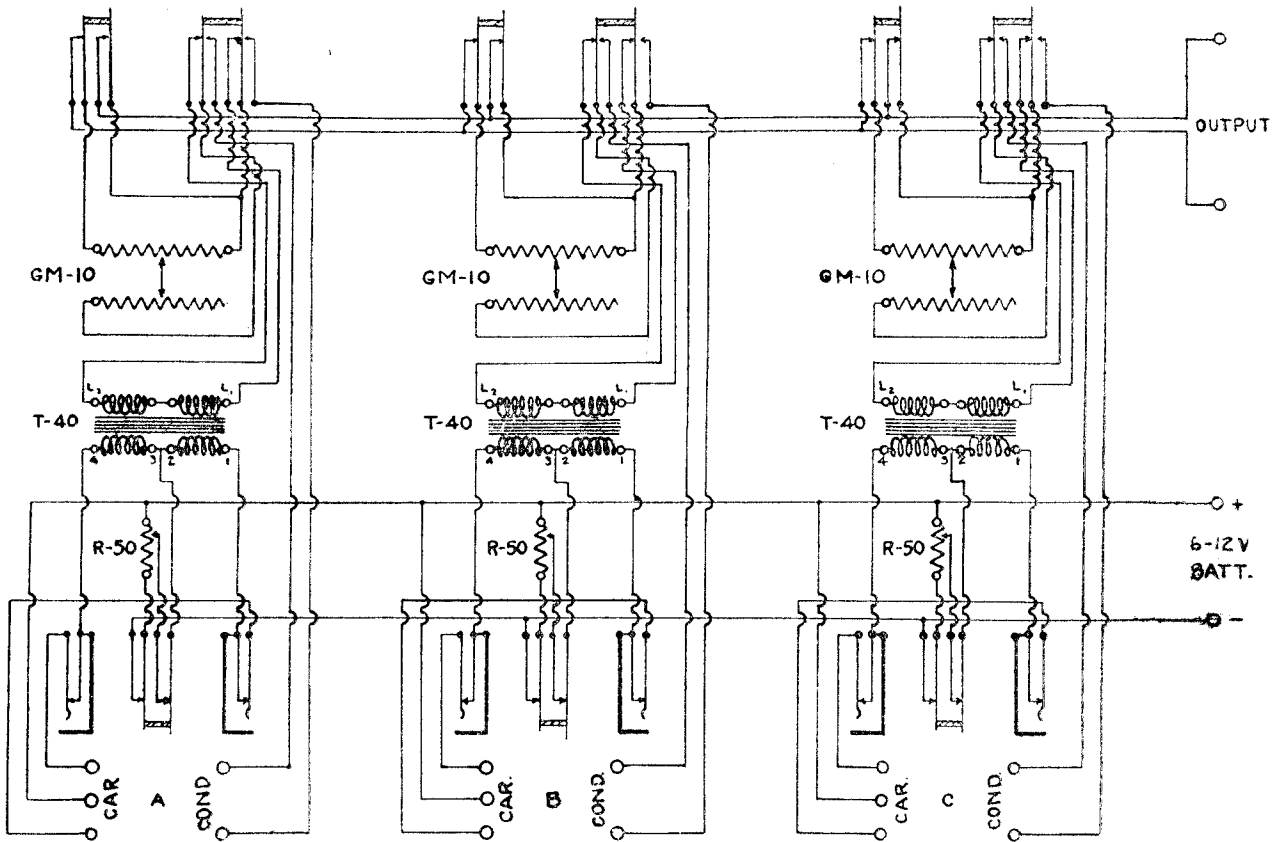


Part No. W-1401	HOWARD RADIO CO.
7-28-27	SOUTH HAVEN MICHIGAN
	SCHEMATIC OR 135 AC
	POWER UNIT 250 2130
	WARRANTY 6-1-27
	REV. 01-27-27
	APPROX 11-27-27
	SCALE

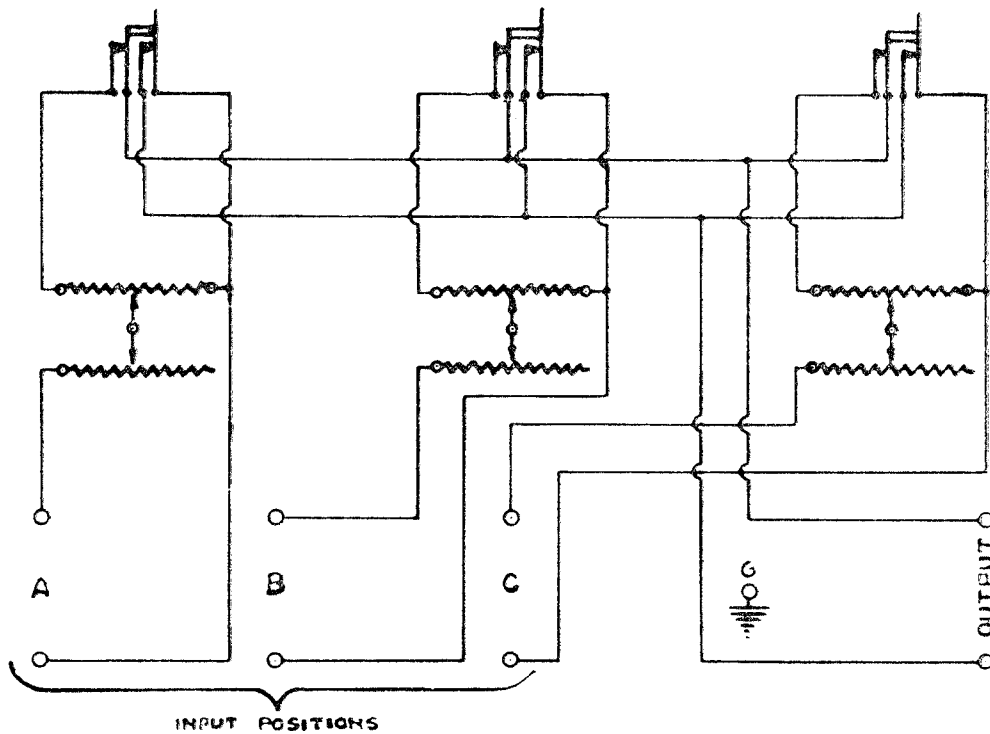
Models 135, 395, 445, 470, (1927)

PILOT 6.0 V		
DET	1 AF	2 AF
'27	'26	'10
RF	RF	RF
'26	'26	'26
1-31 RECT IN POWER UNIT		
FRONT		

J. E. JENKINS AND S. E. ADAIR
 MODEL 3B Mixing Panel
 MODEL 3C Mixing Panel



Schematic of: 3B MIXING PANEL

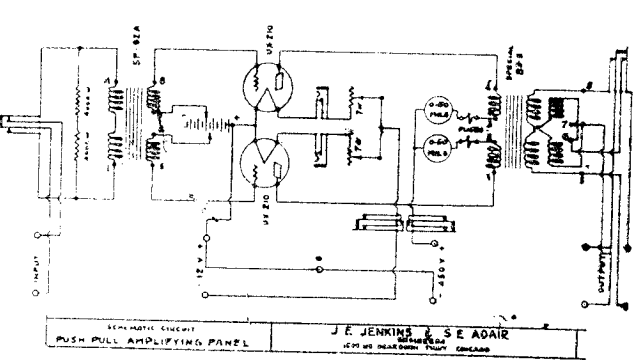
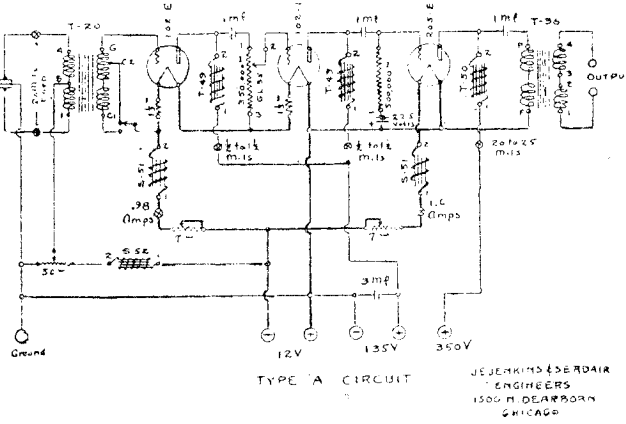
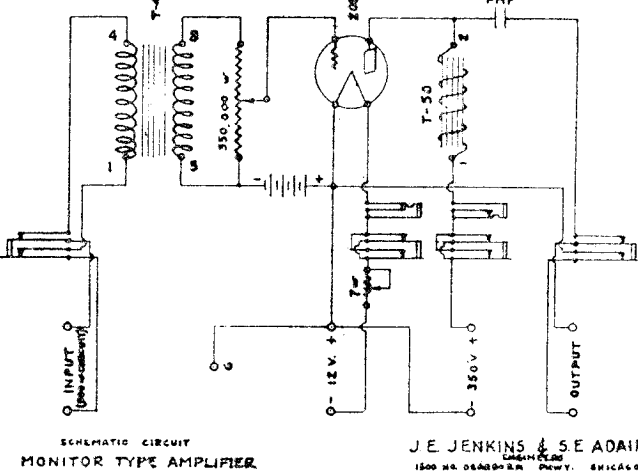
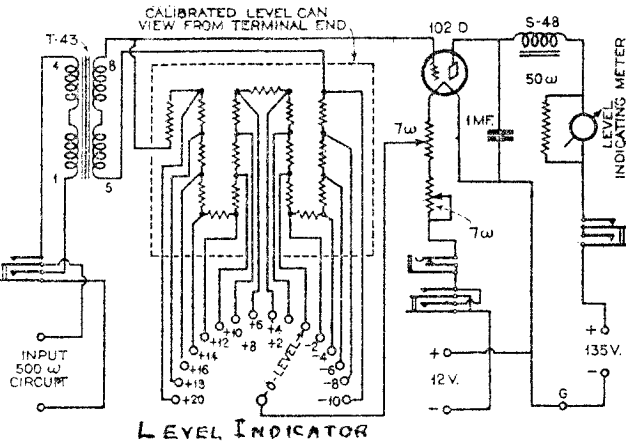
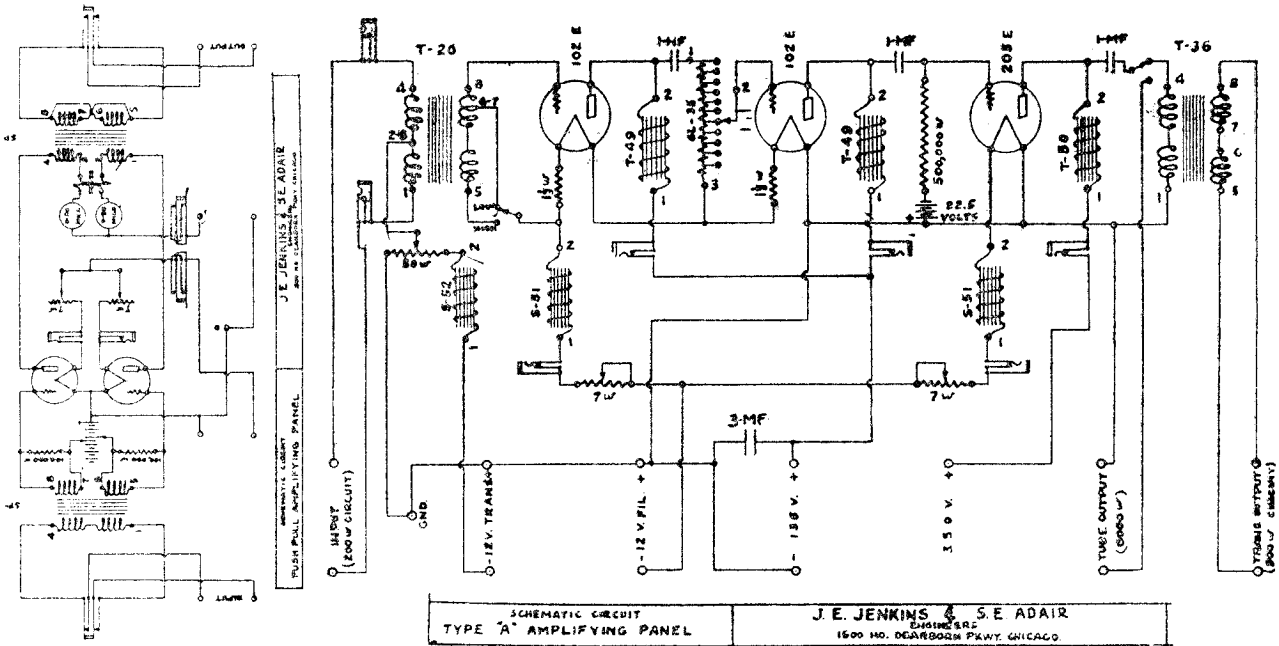


SCHEMATIC CIRCUIT
 3-C MIXING PANEL

J. E. JENKINS & S. E. ADAIR
 ENGINEERS
 1500 NO. DEARBORN PKWY. CHICAGO

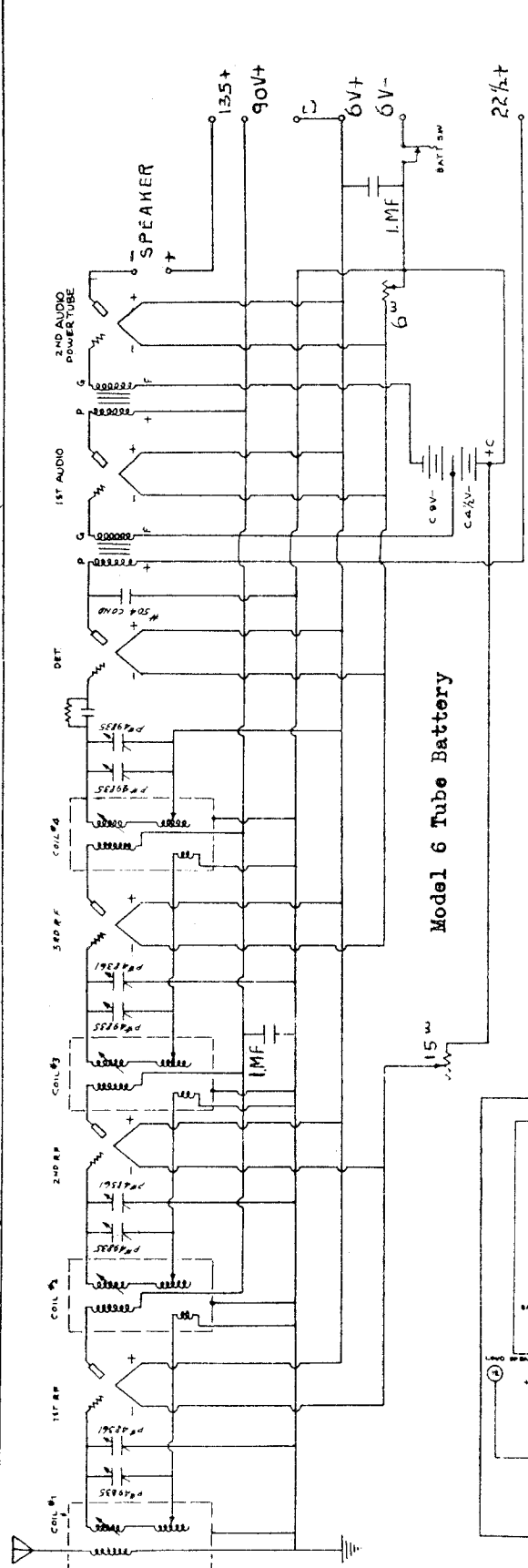
MODEL A Two Types
 MODEL PushPull Amp.
 MODEL Monitor Amp.
 MODEL Level Indicator

J. E. JENKINS AND S. E. ADAIR

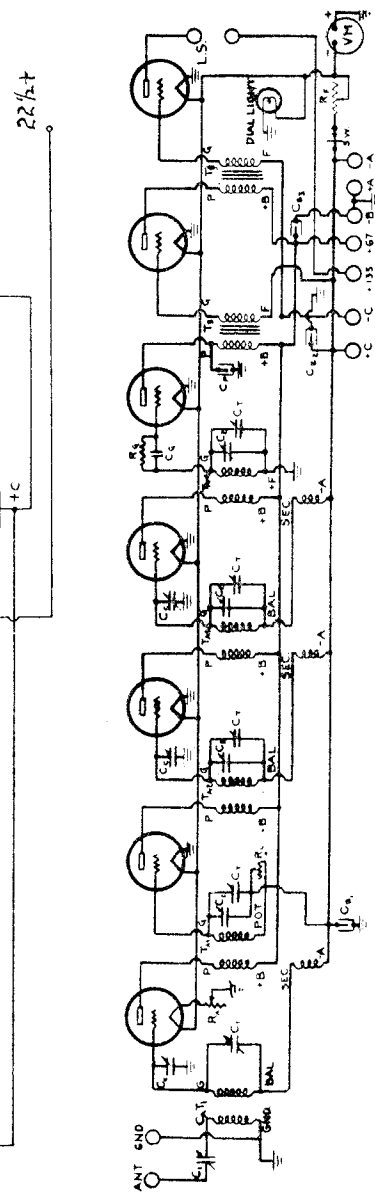


KELLOGG SWITCHBOARD & SUPPLY CO.

MODEL 6 Tube Battery
 MODEL 7 Tube Cascade
 MODEL Wave Master

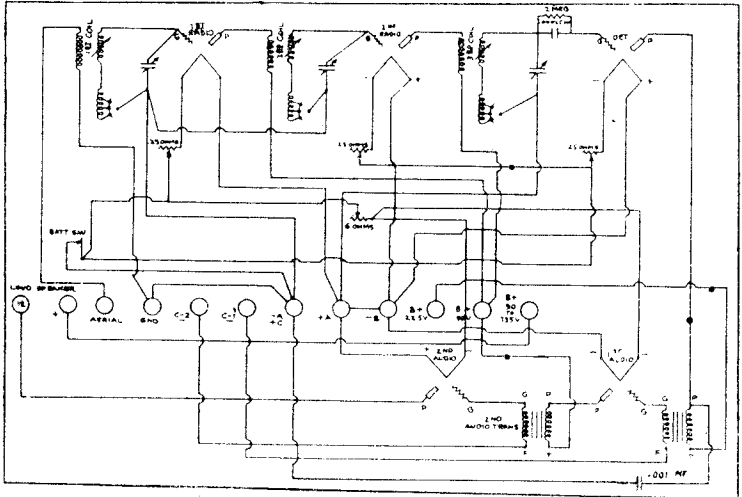


Model 6 Tube Battery



- C₁ ANTENNA EQUALIZER .00027 MF
- C₂ TUNING ALIGNMENT CONDENSER
- C_B BYPASS CONDENSER .1MF
- C_C BALANCING CONDENSER .000060 MF
- C_G GRID CONDENSER .00025 MF
- C_P BYPASS CONDENSER .001MF
- C_T GANG CONDENSER .0005 MF UNITS (STATION SELECTOR)
- L DIAL LIGHT
- R ROTOR PLATES OF VARIABLE CONDENSER
- R_F FILAMENT RHEOSTAT 4 OHMS
- R_G GRID LEAK 2 1/2 MEGOHMS.
- R_L NON-INDUCTIVE WIRE RESISTANCE 200 OHMS.
- R_A RHEOSTAT 20 OHMS.
- S STATIONARY PLATES OF VARIABLE CONDENSER.
- SW FILAMENT SWITCH.
- T_{FM} RADIO FREQUENCY TRANSFORMER
- T_I INPUT TRANSFORMER
- T_S KELLOGG AUDIO TRANSFORMER
- VM FILAMENT VOLTMETER
- # GROUND TO SHIELD

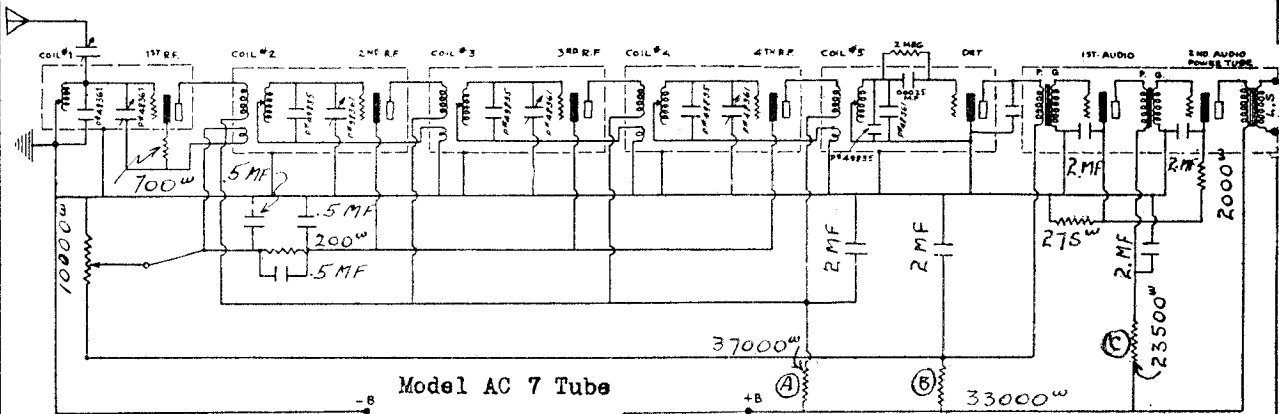
Model 7 Tube Cascade



Model Wave Master

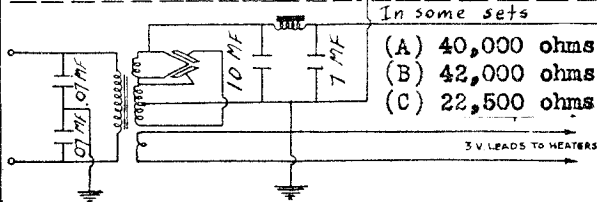
MODEL RFL 701
 MODEL AC 7 Tube
 MODEL Chassis B

KELLOGG SWITCHBOARD & SUPPLY CO.

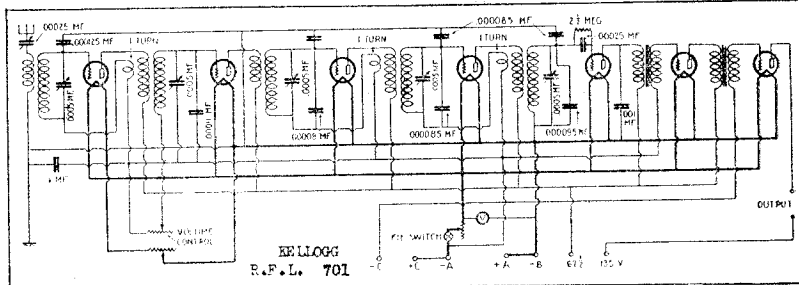


Model AC 7 Tube

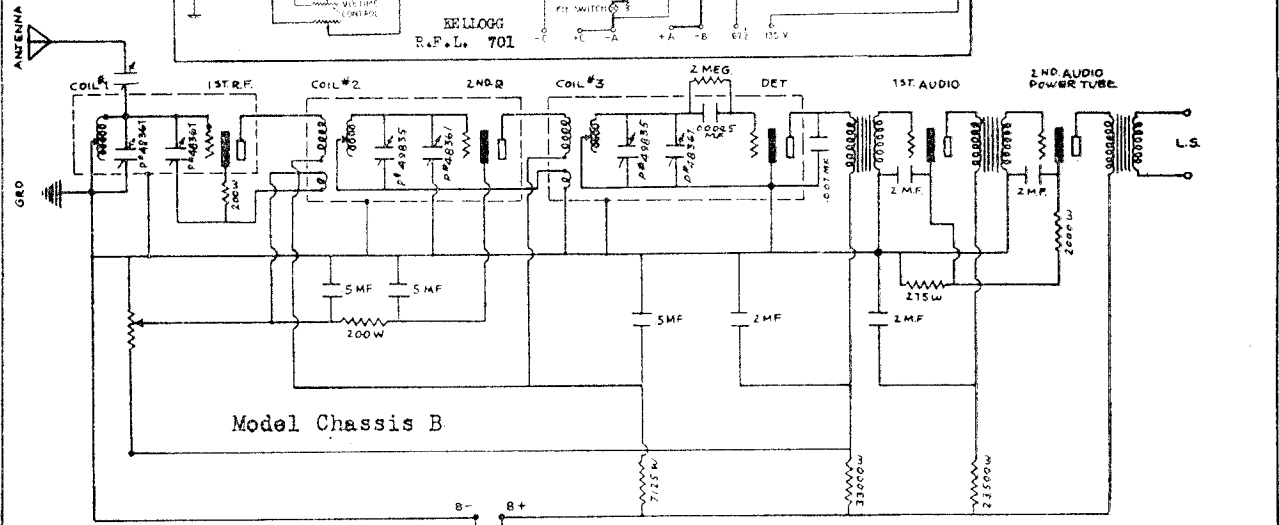
KELLOGG—7 Tube "A" Chassis
 Line Voltage 115—Volume Control Full



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st, 2nd, 3rd, etc.	READINGS, PLUG IN SOCKET OF SET								
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE
1	401	1st. R.F.	2.75	115	2.75	108	3.5	—	6.2	10.0	4.3
2	401	2nd. R.F.	2.75	115	2.75	108	4.5	—	6.2	10.0	4.3
3	401	3rd. R.F.	2.75	115	2.75	108	4.5	—	6.2	10.0	4.3
4	401	4th. R.F.	2.75	115	2.75	108	4.5	—	6.2	10.0	4.3
5	401	Detector	2.75	26	2.75	23	0.0	—	1.4	1.3	.1
6	401	1st. A.F.	2.75	115	2.75	108	5.0	—	6.2	10.0	4.3
7	403	2nd. A.F.	2.75	165	2.75	133	33.5	—	13.2	13.2	2.0
8	280	Rectifier	—	—	4.60	—	—	—	22.0	—	—

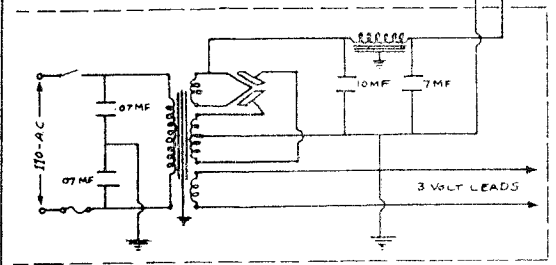


Model RFL 701



Model Chassis B

KELLOGG—5 Tube "B" Chassis
 Line Voltage 115—Volume Control Full

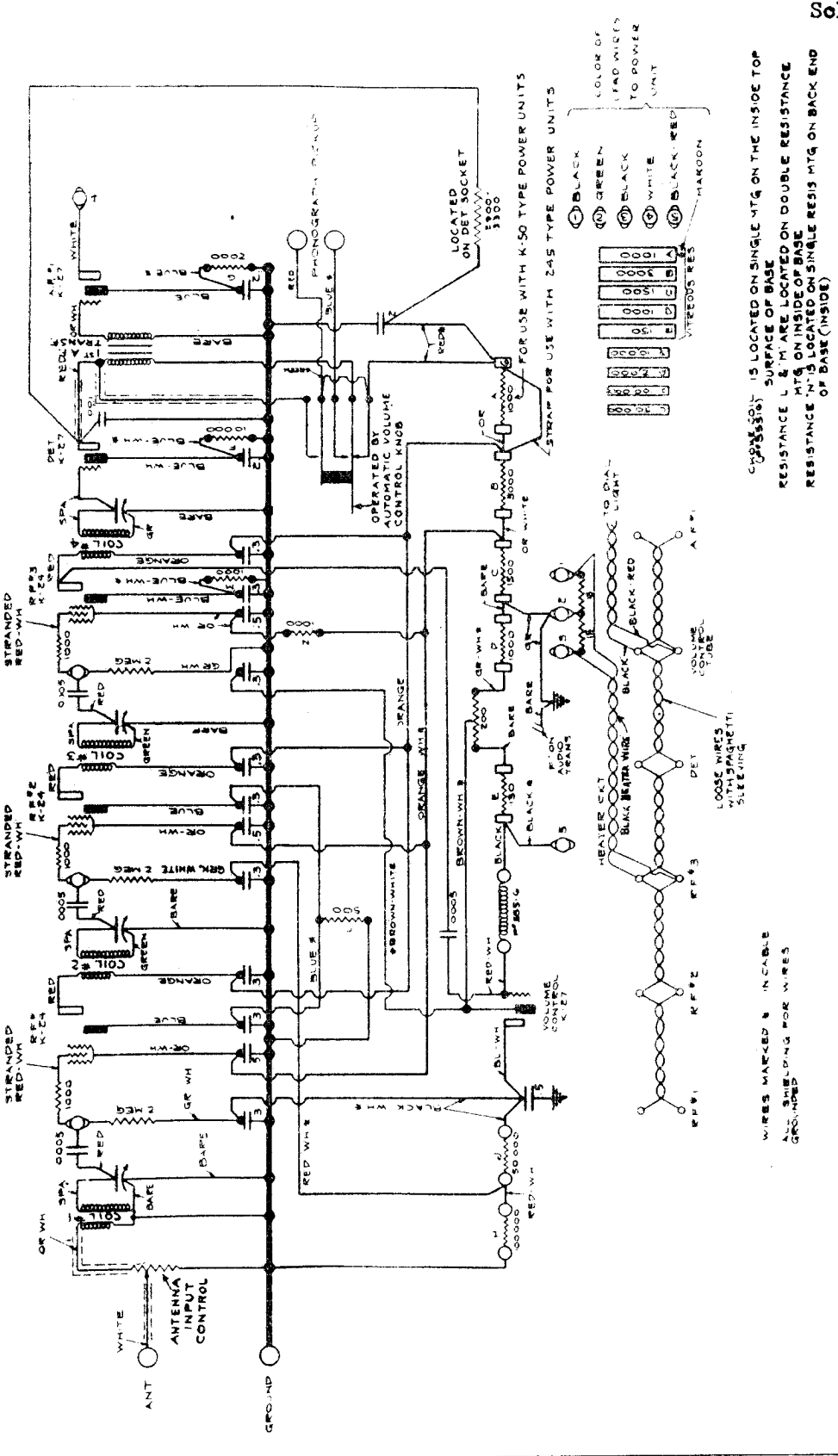


TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st, 2nd, 3rd, etc.	READINGS, PLUG IN SOCKET OF SET								
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE
1	401	1st. R.F.	2.75	113	2.75	106	3.1	—	6.0	9.5	3.25
2	401	2nd. R.F.	2.75	113	2.75	106	4.2	—	6.0	9.5	3.25
3	401	3rd. R.F.	2.75	28	2.75	25	0.0	—	1.4	1.3	.1
4	401	4th. R.F.	2.75	113	2.75	106	4.2	—	6.0	9.5	3.25
5	403	2nd. A.F.	2.75	113	2.75	106	4.8	—	4.3	6.0	1.7
6	280	Rectifier	—	—	4.60	—	—	—	20.0	—	—

KELLOGG SWITCHBOARD & SUPPLY CO.

MODEL 523,524,525,
526,527,528
RF Chassis
Schematic

RADIO CIRCUIT KELLOGG SCREEN GRID RECEIVER



FOR POWER UNITS SEE SUBSEQUENT PAGES

MODEL 523, 526
Power Unit
Schematic

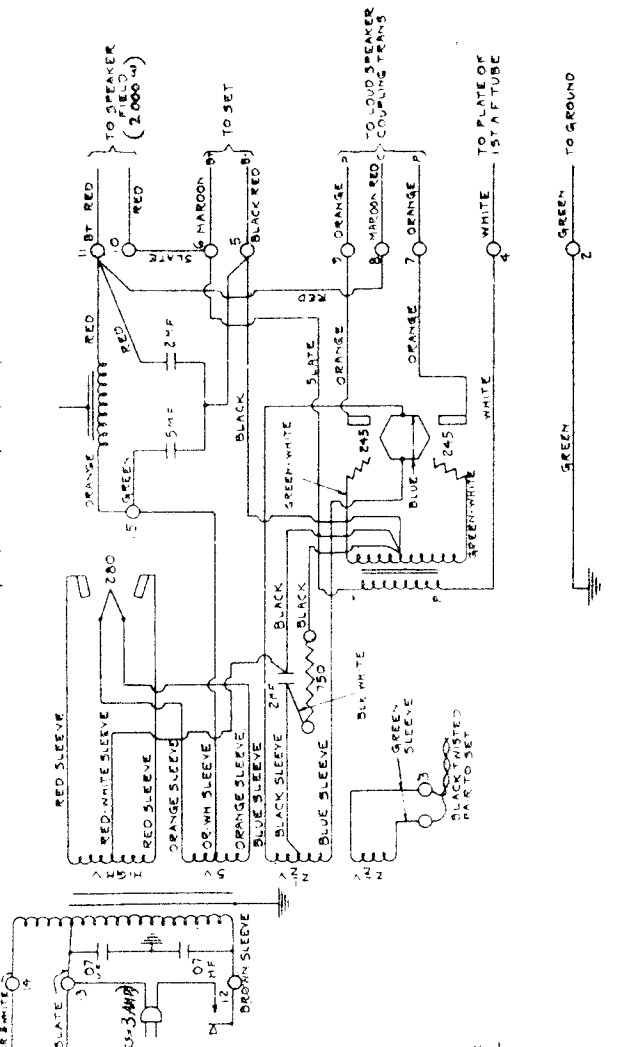
KELLOGG SWITCHBOARD & SUPPLY CO.

KELLOGG—Model 526-25 Cycle
Line Voltage 112—Volume Control Position Full On
***Volume Control Tube**

POWER UNIT CIRCUIT
245 TYPE

FOR SETS 523, 526

TUBE NO.	TYPE	POSITION OF TUBE	TIME OUT			RESISTANCE PLUG IN SOCKET OF SET			VOLUME IN TESTER		
			1ST	2ND	3RD	A	B	C	1	2	3
224	1st A.F.	1	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	2nd A.F.	2	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	3rd A.F.	3	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	Det.	4	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	1st A.	5	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	2nd A.	6	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	3rd A.	7	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
250	Rect.	8	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2

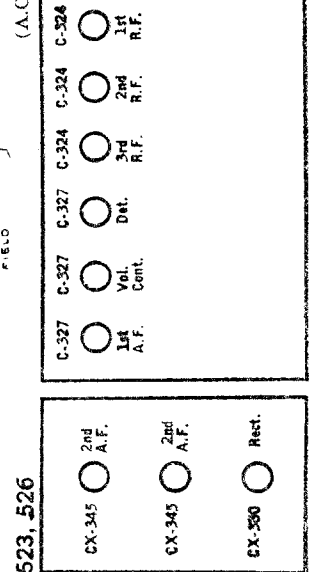


KELLOGG—Model 523-60 Cycle
Line Voltage 112—Volume Control Position Full On
***Volume Control Tube**

TUBE NO.	TYPE	POSITION OF TUBE	TIME OUT			RESISTANCE PLUG IN SOCKET OF SET			VOLUME IN TESTER		
			1ST	2ND	3RD	A	B	C	1	2	3
224	1st A.F.	1	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	2nd A.F.	2	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	3rd A.F.	3	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	Det.	4	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	1st A.	5	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	2nd A.	6	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	3rd A.	7	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
250	Rect.	8	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2

KELLOGG—Model 526-25 Cycle
Line Voltage 112—Volume Control Position Full On
***Volume Control Tube**

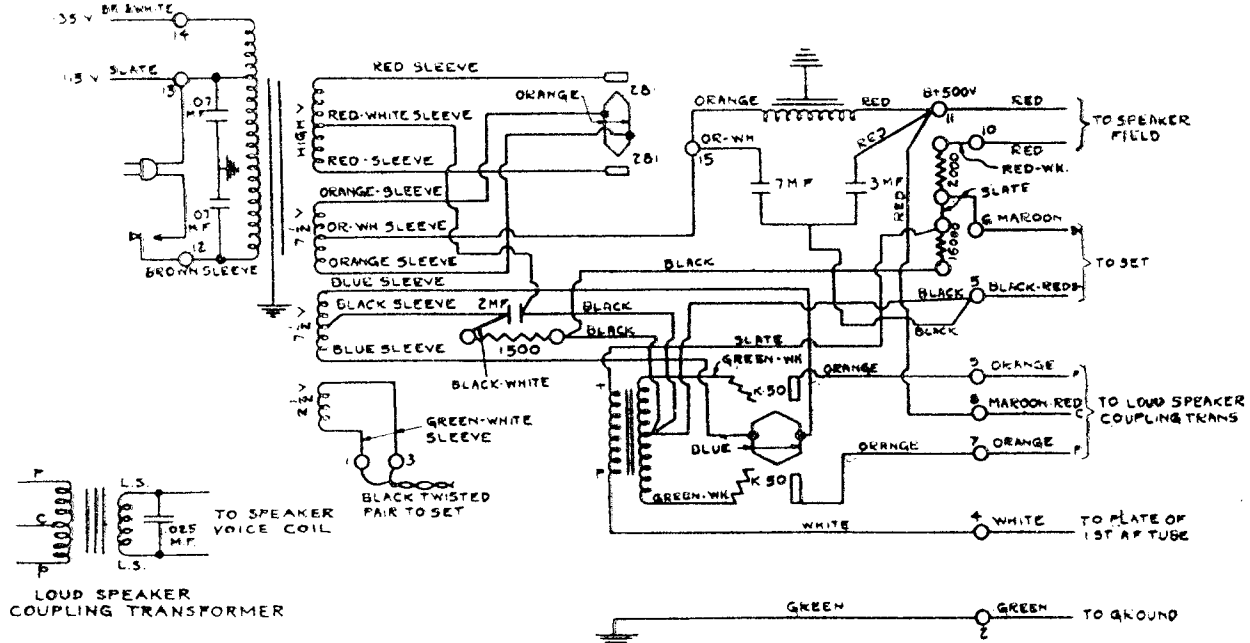
TUBE NO.	TYPE	POSITION OF TUBE	TIME OUT			RESISTANCE PLUG IN SOCKET OF SET			VOLUME IN TESTER		
			1ST	2ND	3RD	A	B	C	1	2	3
224	1st A.F.	1	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	2nd A.F.	2	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
224	3rd A.F.	3	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	Det.	4	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
227	1st A.	5	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	2nd A.	6	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
245	3rd A.	7	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2
250	Rect.	8	1.2	1.2	1.2	1	1	1	1.2	1.2	1.2



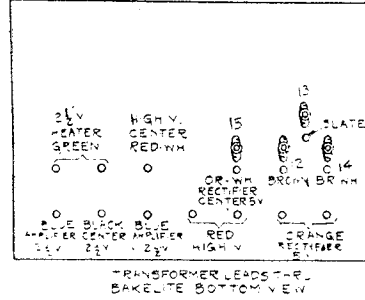
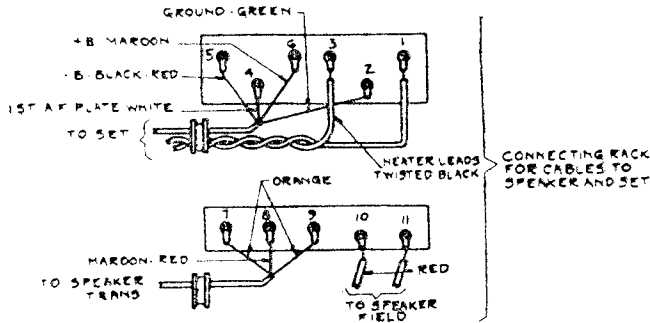
- 523, 526 (A.C.)**
- CX-345 2nd A.F.
 - CX-345 2nd A.F.
 - CX-350 Rect.
 - C-327 1st A.F.
 - C-327 Vol. Cont.
 - C-327 Det.
 - C-324 3rd R.F.
 - C-324 2nd R.F.
 - C-324 1st R.F.
 - C-324 C-324

KELLOGG SWITCHBOARD & SUPPLY CO.

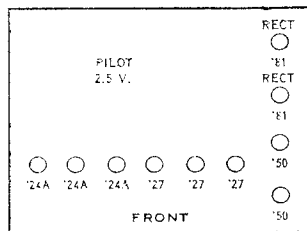
MODEL 524, 525,
527, 528
Power Unit
Schematic



LOUD SPEAKER COUPLING TRANSFORMER



Models 524, 525, 527, 528



POWER UNIT CIRCUIT
K-50 TYPE
FOR SETS 524, 525, 527, 528

KELLOGG—527-528-25 Cycle
Line Voltage 112—*Volume Control Tube

KELLOGG—524-525-60 Cycle
Line Voltage 112—*Volume Control Tube

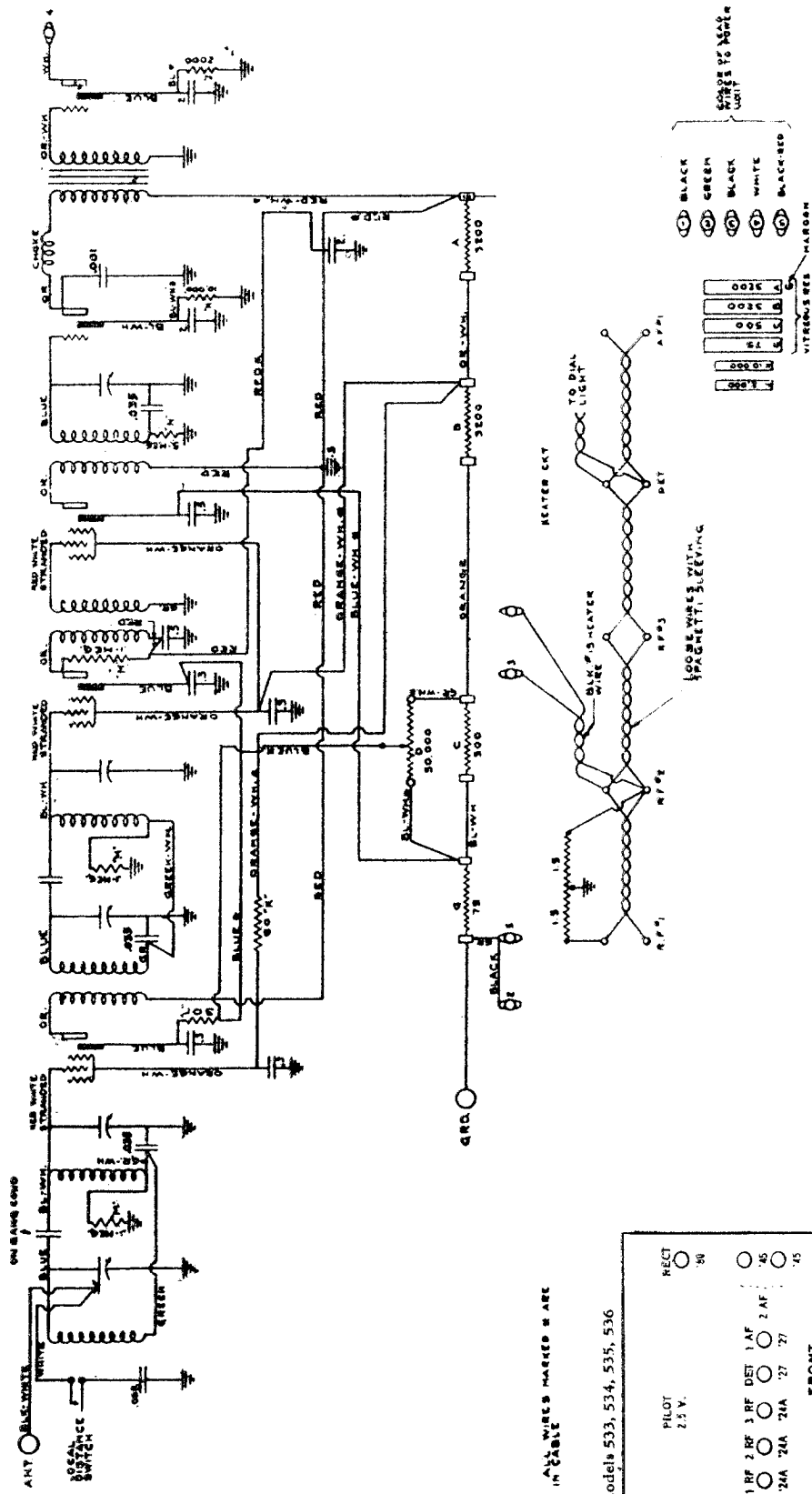
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST AF ETC	READINGS: PLUG IN SOCKET OF SET											
			TUBE OUT			TUBE IN TESTER			TUBE IN TUBES			TUBE IN TUBES		
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE NORMAL	HEATER	PLATE	PLATE	SCREEN	GRID
1	224	1st RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
2	224	2nd RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
3	224	3rd RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
4	227	Det.	2.4	200	2.25	180	17	17	1.8					
5	227	2B	2.4	28	2.25	28			45					
6	227	1st A	2.4	220	2.25	180	10	10	5					
7	250	2nd A	7.5	440	7.4	420	86		30					
8	250	2nd A	7.5	440	7.4	420	86		30					
9	281	Rect.	7.5		7.4				60					
10	281	Rect.	7.5		7.4				60					

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST AF ETC	READINGS: PLUG IN SOCKET OF SET											
			TUBE OUT			TUBE IN TESTER			TUBE IN TUBES			TUBE IN TUBES		
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE NORMAL	HEATER	PLATE	PLATE	SCREEN	GRID
1	224	1st RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
2	224	2nd RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
3	224	3rd RF	2.4	164	2.25	160	2	2	1.4	1.6	.2	46		
4	227	Det.	2.4	200	2.25	180	17	17	1.8					
5	227	2B	2.4	28	2.25	28			45					
6	227	1st A	2.4	220	2.25	180	10	10	5					
7	250	2nd A	7.5	440	7.4	420	86		30					
8	250	2nd A	7.5	440	7.4	420	86		30					
9	281	Rect.	7.5		7.4				60					
10	281	Rect.	7.5		7.4				60					

MODEL 533, 534
535, 536
R.F. Chassis
Schematic

KELLOGG SWITCHBOARD & SUPPLY CO.

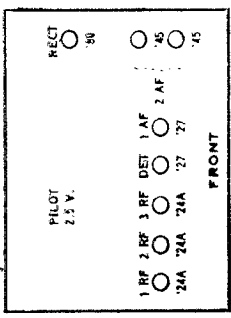
RADIO CIRCUIT KELLOGG SCREEN GRID RECEIVER



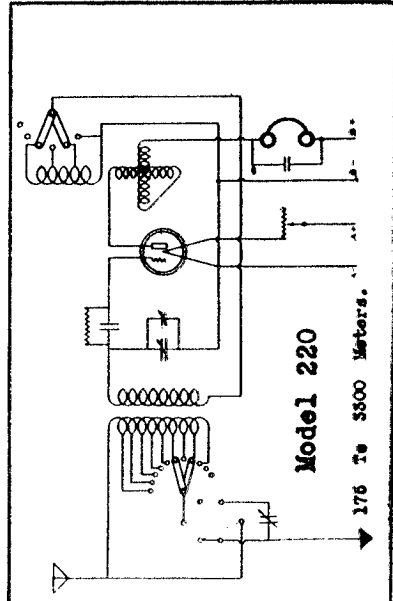
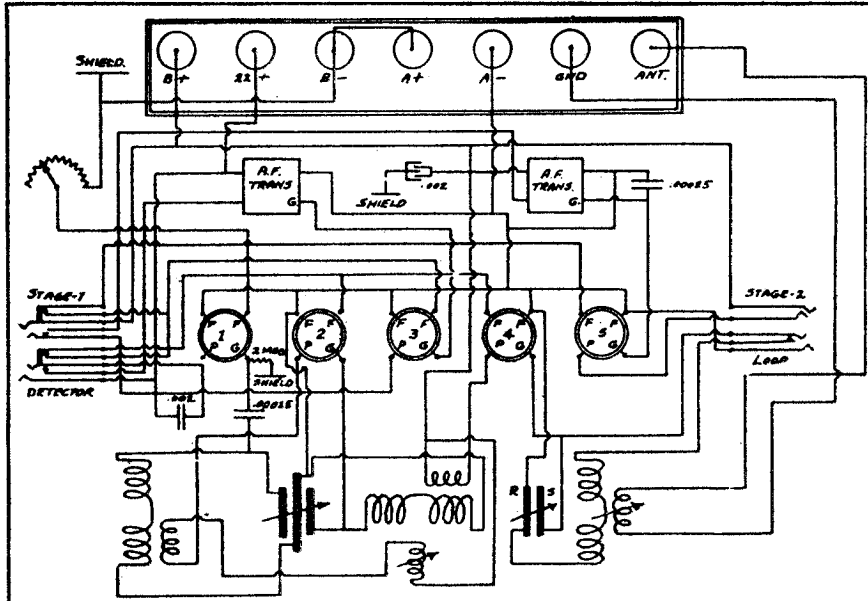
FOR POWER UNITS SEE INDEX

ALL WIRES MARKED IN ARE IN CABLE

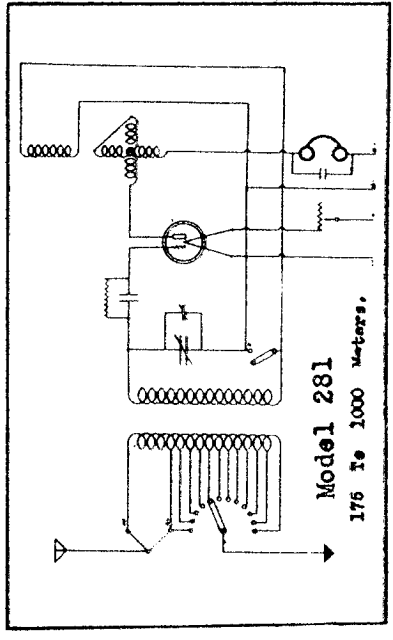
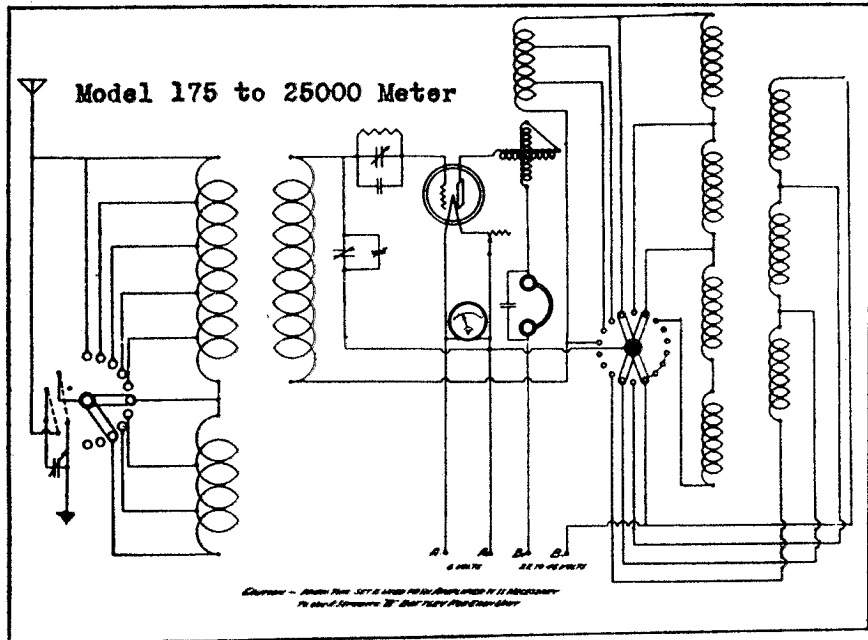
Models 533, 534, 535, 536



COLIN B. KENNEDY CORP. MODEL 220
 MODEL 281
 MODELS 15,16 (Type 430-43)
 MODEL 175 to 25000 Meter

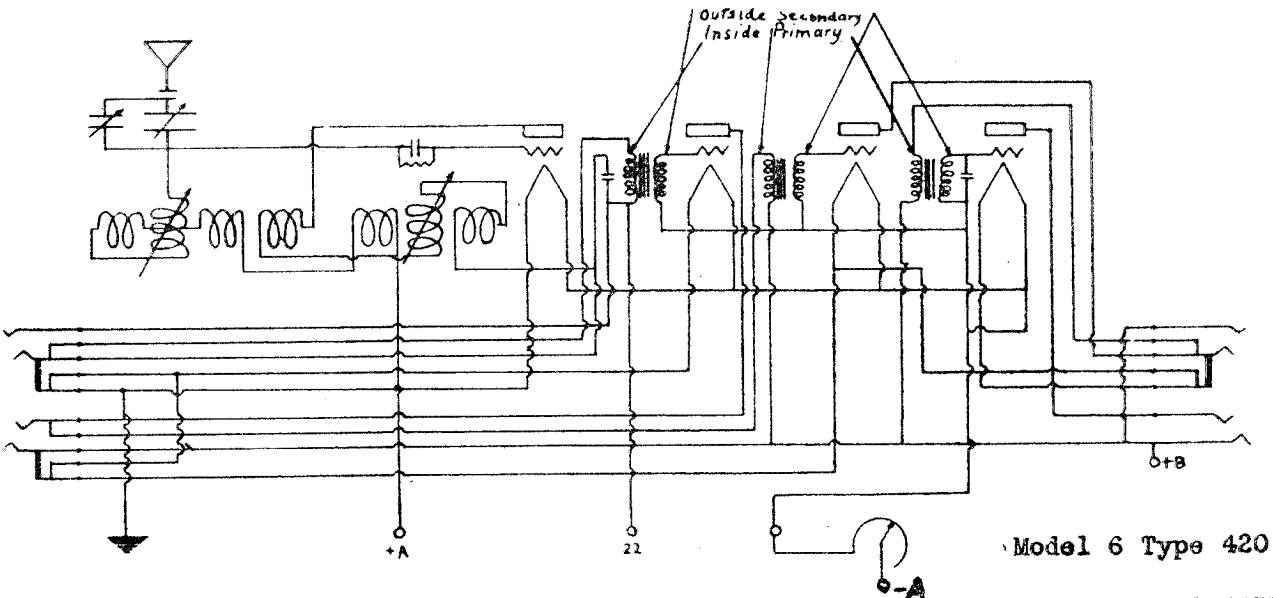
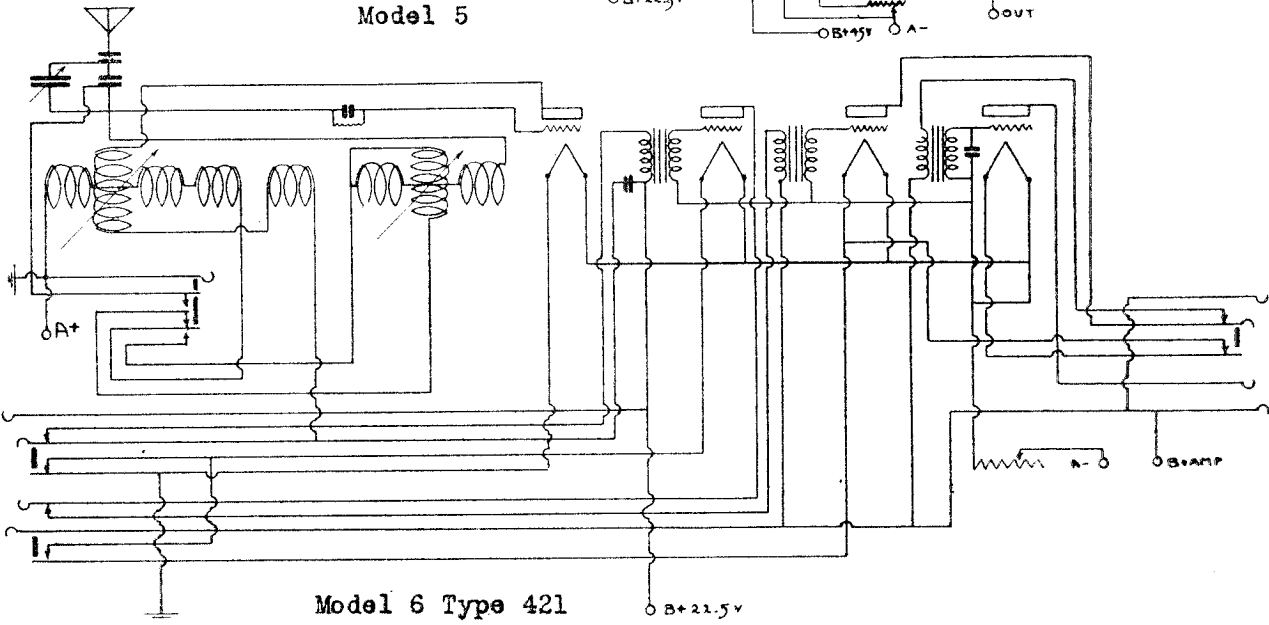
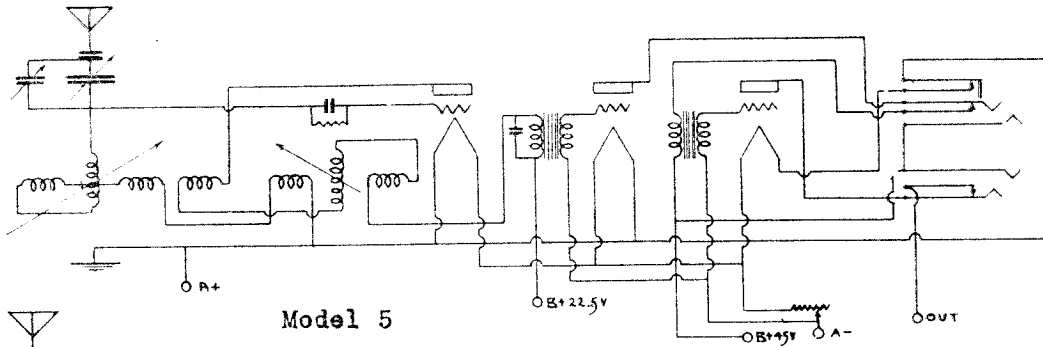


Models 15,16 (Type 430-43) Tube orders 4, - 2, - 1, - 3, - 5.



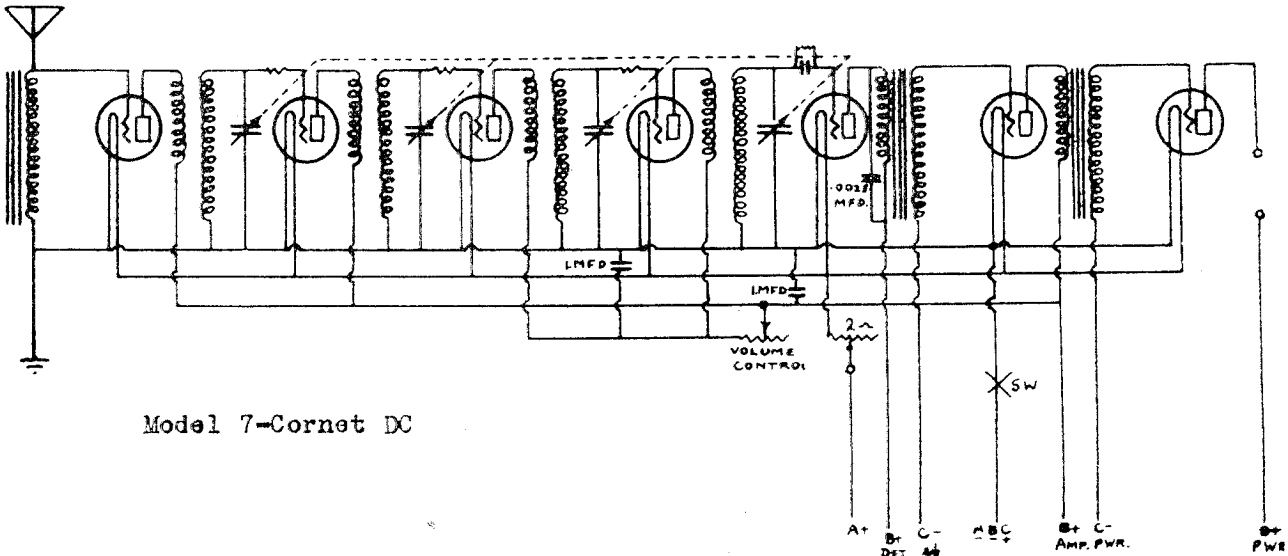
MODEL 5
MODEL 6 Type 421
MODEL 6 Type 420

COLIN B. KENNEDY CORP.

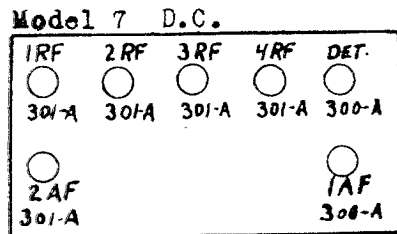
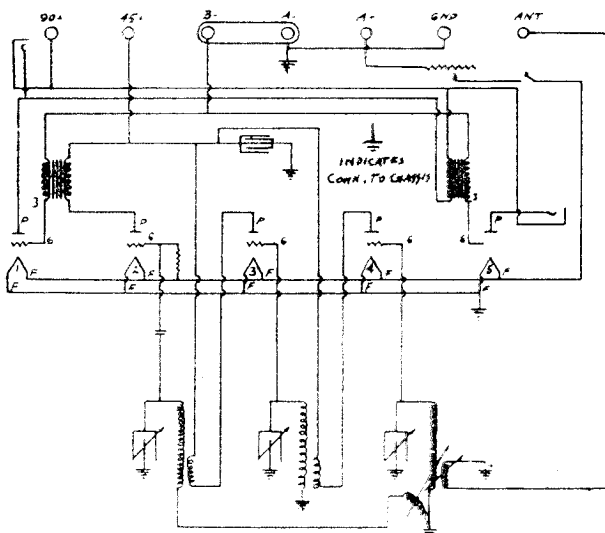


COLIN B. KENNEDY CORP.

MODEL 7-Cornet DC
 MODEL 20 Type 440
 MODEL 30 Type 435



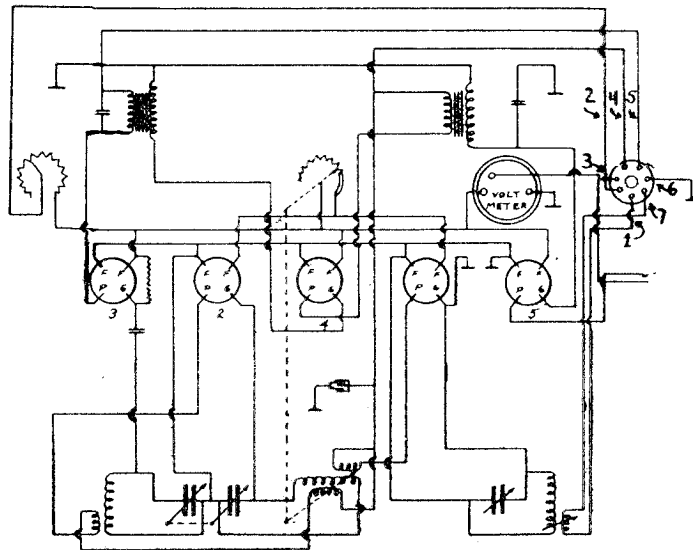
Model 7-Cornet DC



Model 20
 Type 440
 Tube Order
 4,-3,-2,-1,-5.

Model 30
 Type 435

See Radio Connections and Cable Colors
 1 Antenna - Green
 2 - Red
 3 - Blue
 4 - Yellow
 5 - Brown
 6 - Black
 7 - Ground

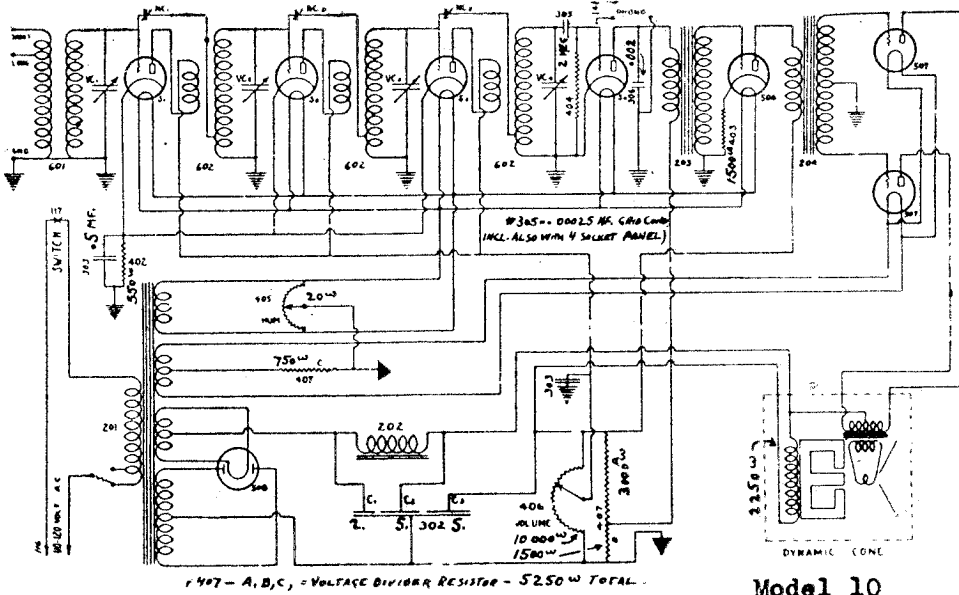


KENNEDY—Model 30-32
 Line Voltage 120—Volume Control Full Or

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES					MILLIAMPERES	
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID - SPACE GRID	CATHODE TO SCREEN GRID - TO HEATER	SCREEN GRID PLATE	PLATE	TUBE TEST
1	224	1 R.F.	2.3	160	3.5	60	-	-	2.2
2	224	2 R.F.	2.3	160	3.5	60	-	-	2.2
3	224	3 R.F.	2.3	160	3.5	60	-	-	2.2
4	227	Det.	2.3	125	-	10	-	-	1.5
5	227	1 A.F.	2.3	155	-	9	-	-	2.4
6	245	PP-AF	2.3	230	-	45	-	-	28
7	245	PP-AF	2.3	230	-	45	-	-	28
8	280	Rect.	4.8	-	-	-	-	46	65

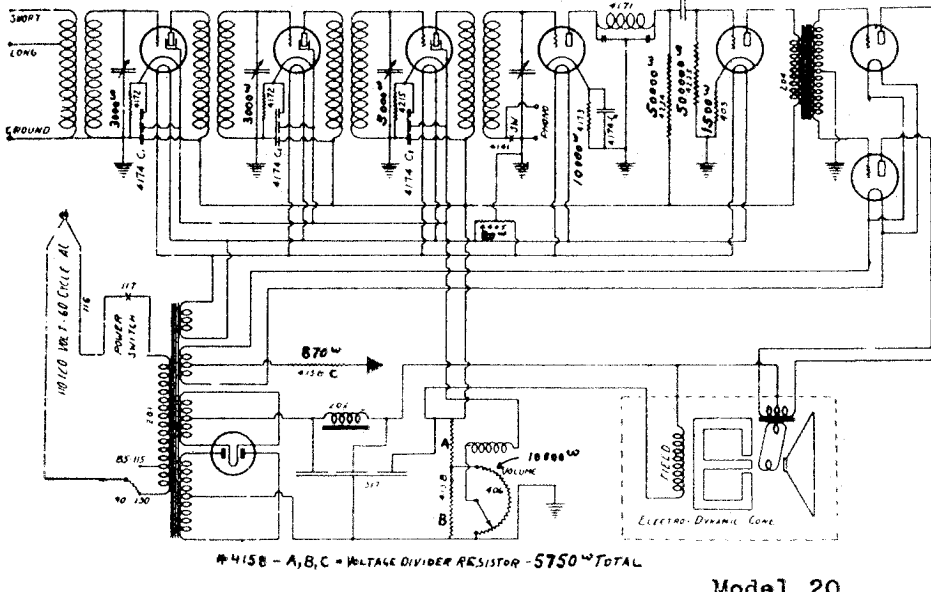
MODEL 10
MODEL 20

COLIN B. KENNEDY CORP.



KENNEDY—Model 10
Line Voltage 112—Set on 120 Volt Tap

TUBE IN CHASSIS	TYPE OF TUBE	POSITION IN CHASSIS	READINGS PLUS IN SOCKET OF SET					TUBE IN TESTER					
			1	2	3	4	5	1	2	3	4	5	
1	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
2	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
3	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
4	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
5	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		



KENNEDY—Model 20—Screen Grid
Line Voltage 112—Set on 120 Volt Tap

TUBE IN CHASSIS	TYPE OF TUBE	POSITION IN CHASSIS	READINGS PLUS IN SOCKET OF SET					TUBE IN TESTER					
			1	2	3	4	5	1	2	3	4	5	
1	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
2	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
3	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
4	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		
5	6X4	Rect.	2.45	130	2.37	110	F	6	5.0	6.8	3		

20, (A.C.)

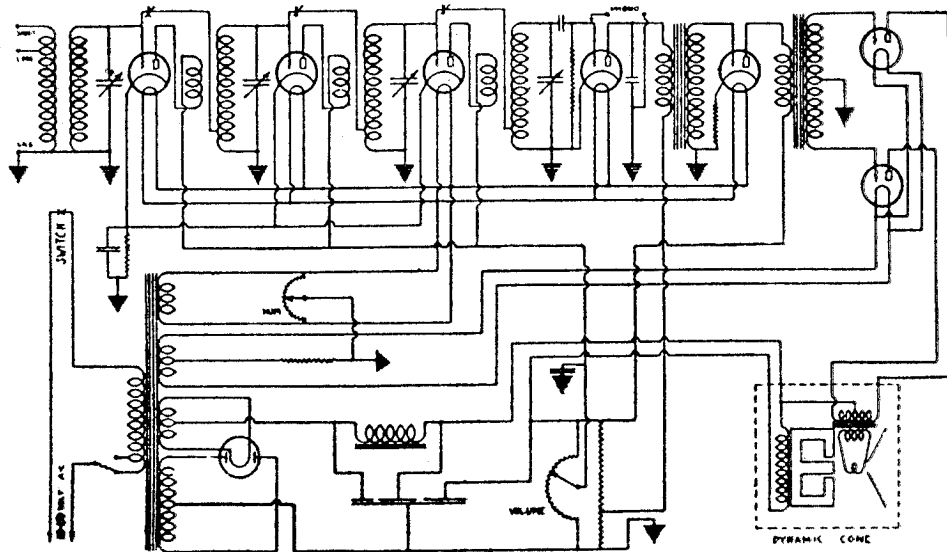
CX-360 Rect.	C-324 1st R.F.	C-327 1st A.F.
CX-345 2nd A.F.	C-324 2nd R.F.	
CX-345 2nd A.F.	C-324 3rd R.F.	
	C-327 Det.	

10 (A.C.)

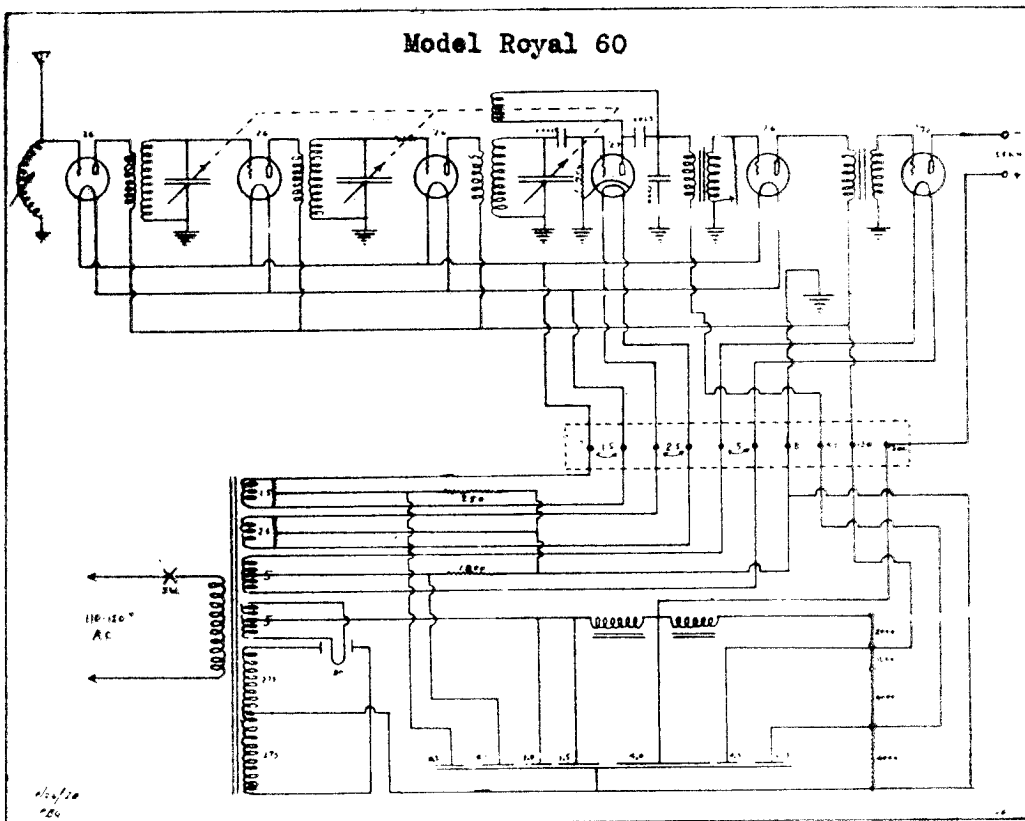
1 RF C-327	RECT. CX-360
2 RF C-327	2 AF CX-345
3 RF C-327	
DET. C-327	

COLIN B. KENNEDY CORP.

MODEL Royal
MODEL Royal 60



Model Royal



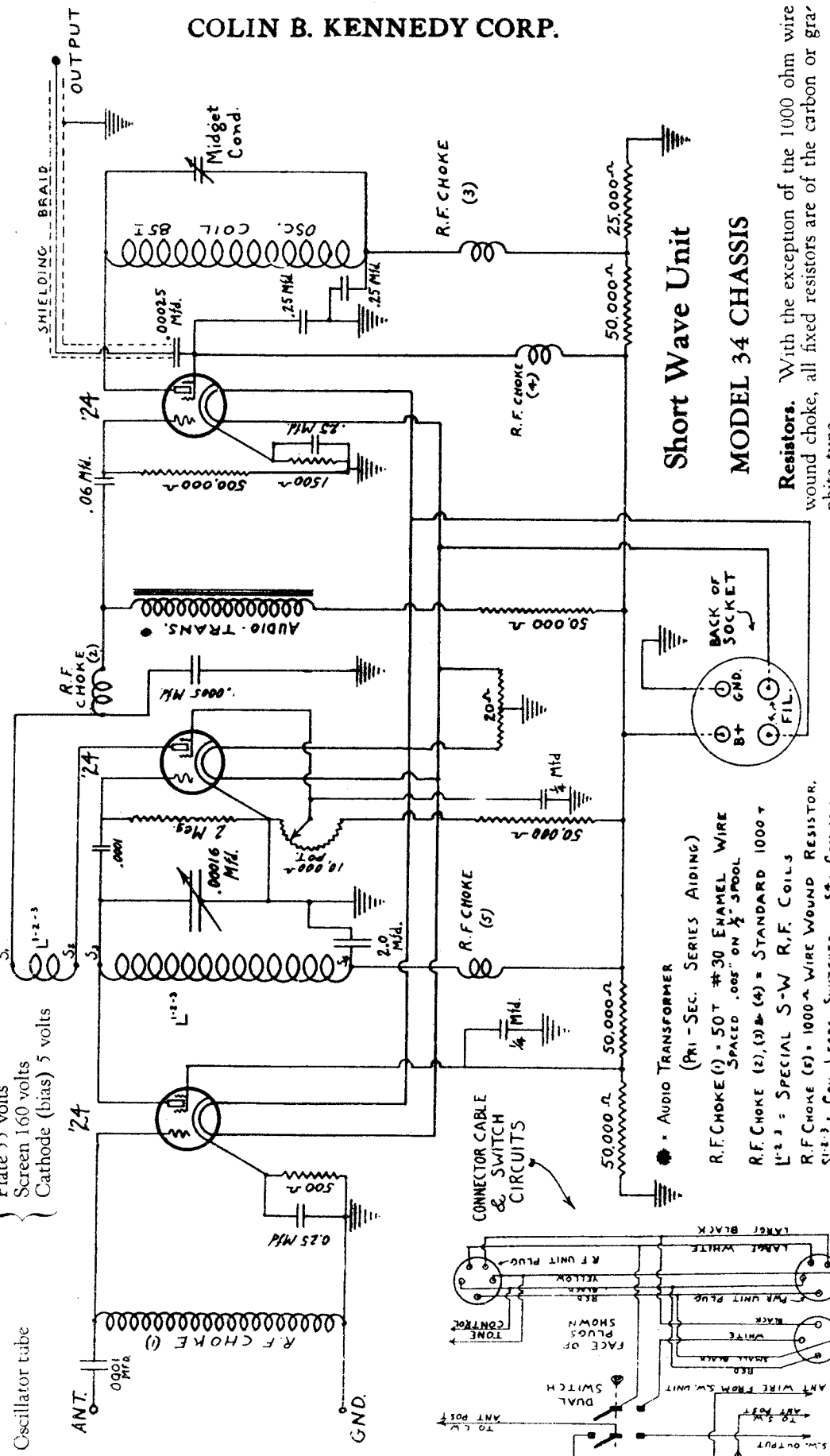
Model Royal 60

1 RF '26	DET '27	2 AF '71A	RECT '80
2 RF '26	3 RF '26	1 AF '26	
PILOT 5.0 V			
FRONT			

MODEL 34
Schematic
Voltage

COLIN B. KENNEDY CORP.

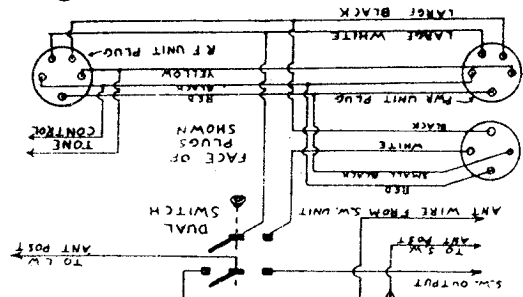
- Yellow 50,000 ohms
 - Red 1,500 ohms
 - Red (large) 2 megohms
 - Grey 25,000 ohms
 - Brown 500,000 ohms
 - Black 500 ohm
 - (Flexible covered resistor)
-
- Radio frequency tube:
 - Plate 160 volts
 - Screen 70 volts
 - Cathode (bias) 1.1 volts
 - Detector tube:
 - Plate 140 volts
 - Screen 30 volts
 - (Volume on Maximum)
 - Oscillator tube:
 - Plate 55 volts
 - Screen 160 volts
 - Cathode (bias) 5 volts



Short Wave Unit
MODEL 34 CHASSIS

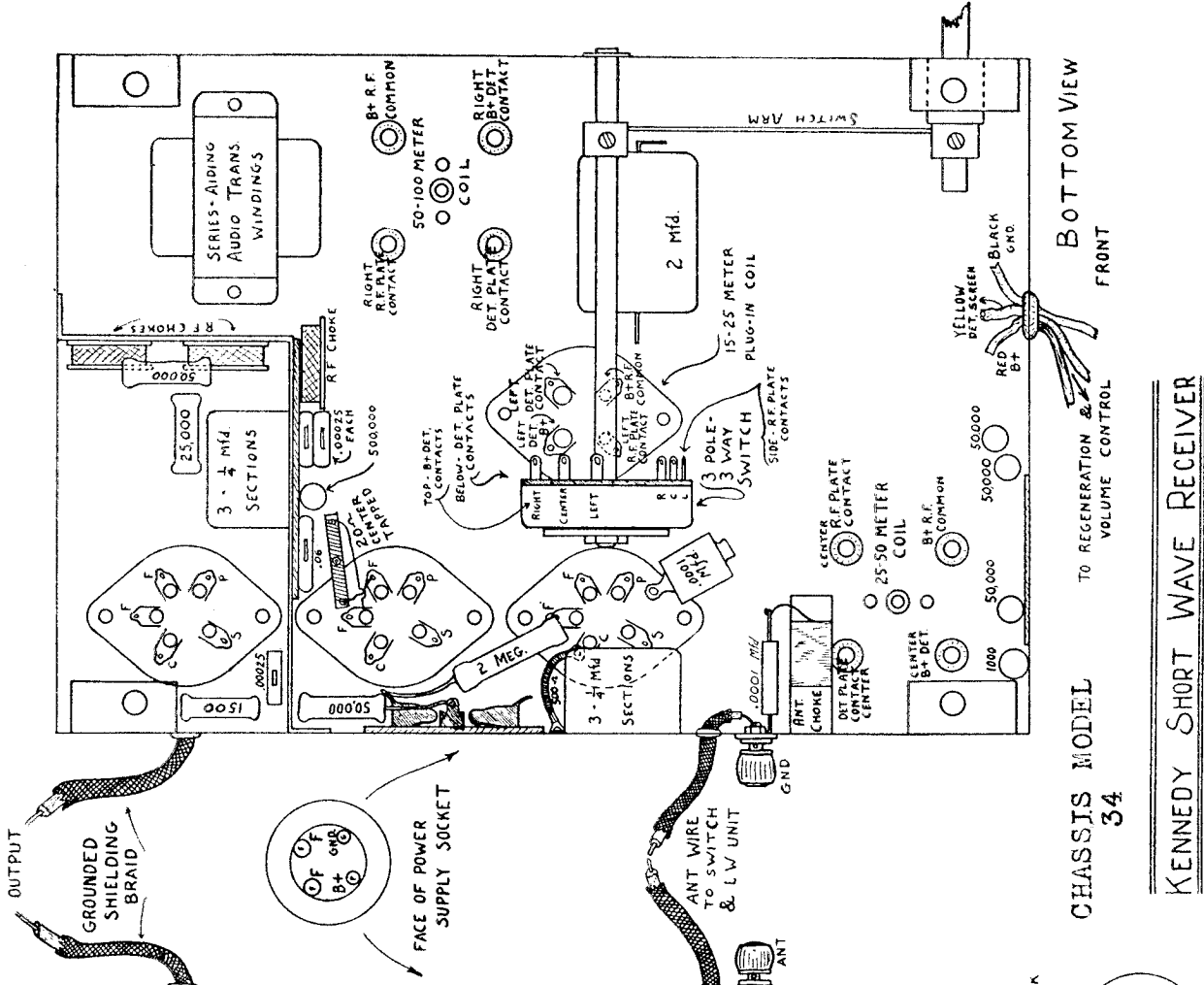
Resistors. With the exception of the 1000 ohm wire wound choke, all fixed resistors are of the carbon or graphite type.

- * AUDIO TRANSFORMER (PRI - SEC. SERIES AIDING)
- R.F. CHOKES (1) - 50 T #30 ENAMEL WIRE SPACED .005" ON 1/2 SPOOL
- R.F. CHOKES (2), (3), (4) - STANDARD 1000 T
- L¹⁻²⁻³ - SPECIAL S-W R.F. COILS
- R.F. CHOKES (5) - 1000 OHM WIRE WOUND RESISTOR. 51-2-3, COIL LEADS SWITCHED, S¹ - COMMON.



COLIN B. KENNEDY CORP.

MODEL 34
Chassis

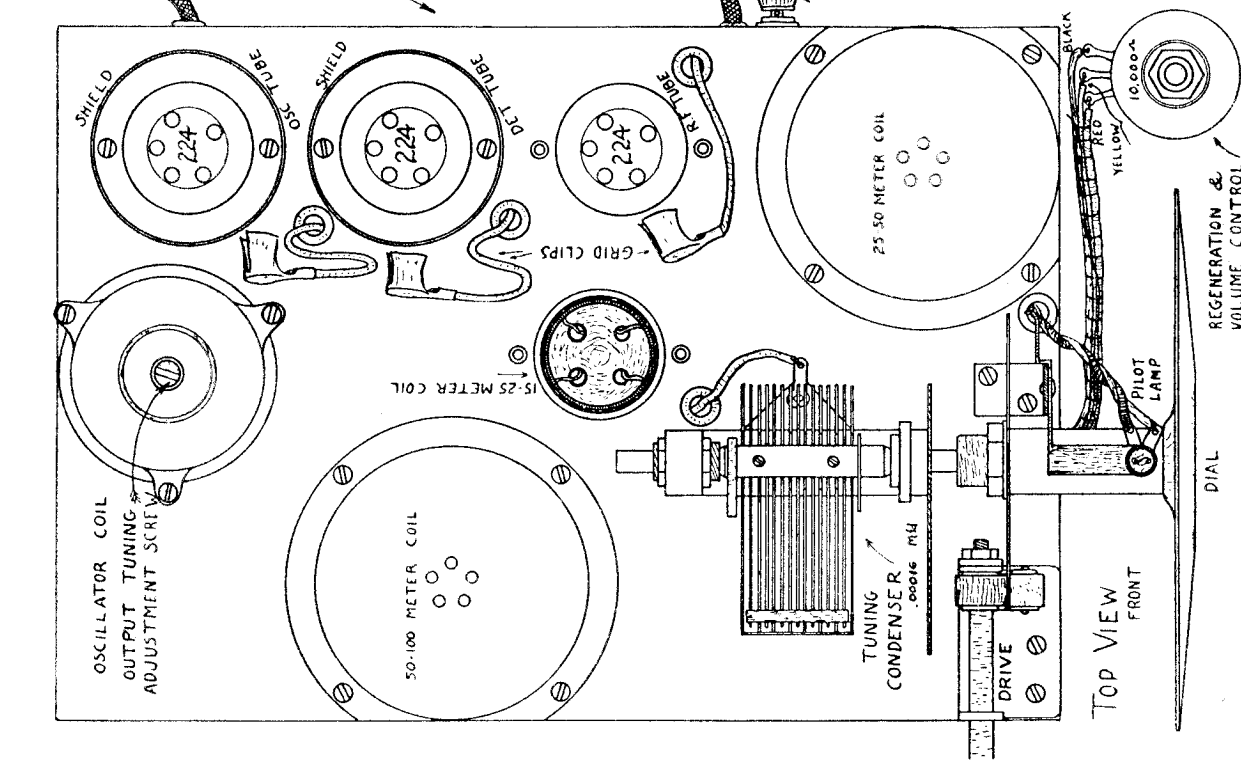


BOTTOM VIEW
FRONT

TO REGENERATION &
VOLUME CONTROL

CHASSIS MODEL
34

KENNEDY SHORT WAVE RECEIVER

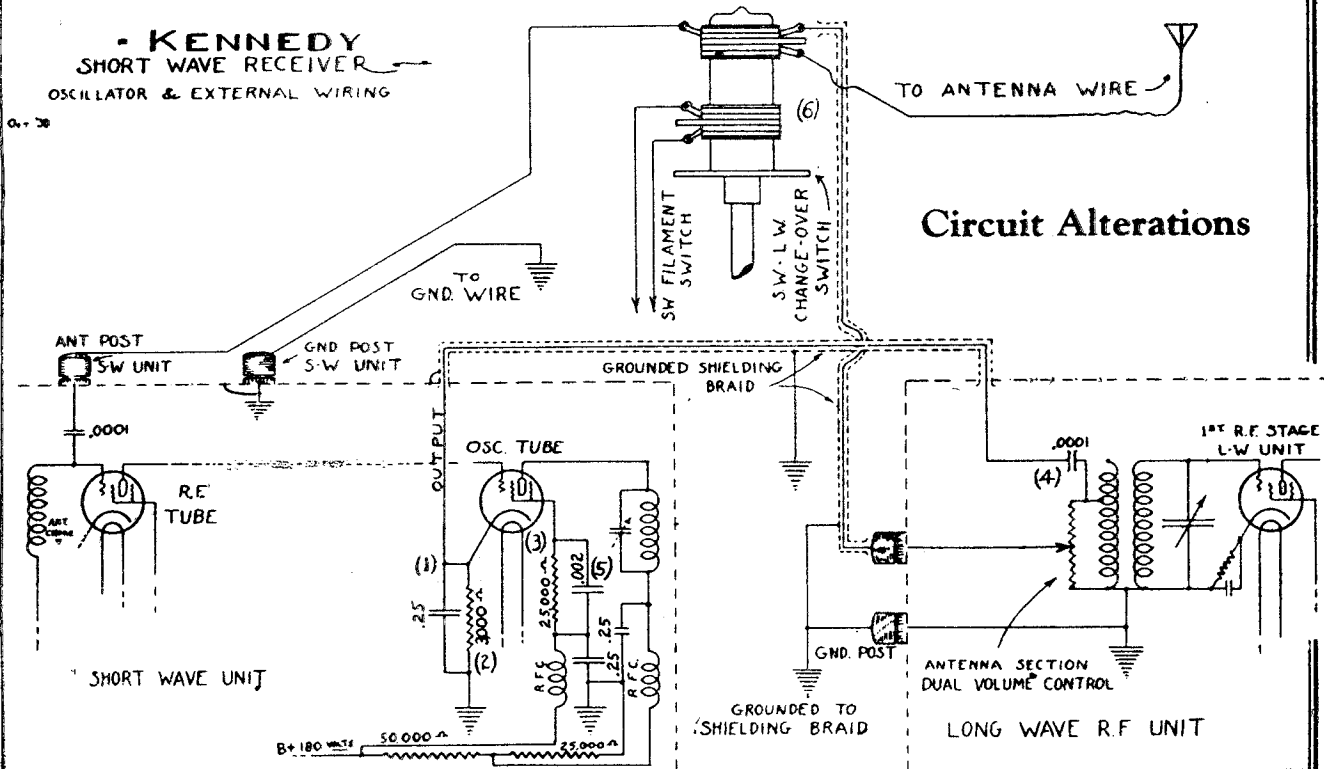


TOP VIEW
FRONT

REGENERATION &
VOLUME CONTROL

MODEL 34
Oscillator
Data

COLIN B. KENNEDY CORP.



Short Wave Chassis Model 34

Certain minor alterations in wiring, as well as the addition of a few small parts, have been made in the production of the short wave chassis, model 34.

These changes have been made as they increase the ease in handling and the efficiency of the unit, but are not recommended for units built prior to the time of their adoption in production.

Variations in the circuit diagram in this booklet are shown in the illustration on this page. It will be noted that the changes have been made in the oscillator and external wiring circuits only—the short wave radio frequency stage and detector remaining entirely as previously indicated. The changes are as follows, numbers corresponding to those on illustration.

(1) The short wave oscillator output is now taken from the cathode of the oscillator tube instead of the screen.

(2) A 3,000-ohm biasing resistor replaces the 1,500-ohm resistor previously indicated at the oscillator cathode.

(3) A 25,000-ohm graphite resistor has been placed in the screen circuit between the R. F. choke and screen.

(4) A .0001 mfd. condenser has been placed in the long wave R. F. unit, at the ungrounded end of the volume control.

(5) A .002 mfd. condenser is placed across the 25,000-ohm screen grid series resistor.

(6) The long wave-short wave change-over switch is rewired as indicated in the accompanying diagram. The portion of the switch utilized

in turning the filaments of the S-W unit on and off remains unchanged. The other portion, single pole-double throw, is now rewired so that the antenna is thrown to either short wave or long wave units as required, being entirely disconnected from the unit it is not intended to connect to. The antenna is now connected to the center pole of this switch, as per diagram.

It will be noted that the short wave unit output now connects permanently to the long wave antenna coil primary through the .0001 mfd. condenser located in the long wave R. F. unit, without being cut in and out by the change over switch, as formerly. This does not add a noticeable load to this circuit, for long wave reception, so does not need to be switched.

Shielding braid is used over the short wave output wire, and the wire from the switch to the antenna post of the long wave unit.

The 10,000-ohm wire wound regeneration and volume control, in the short wave unit, has been replaced by a 10,000-ohm graphite control. This provides a smooth control—less inclined to be noisy.

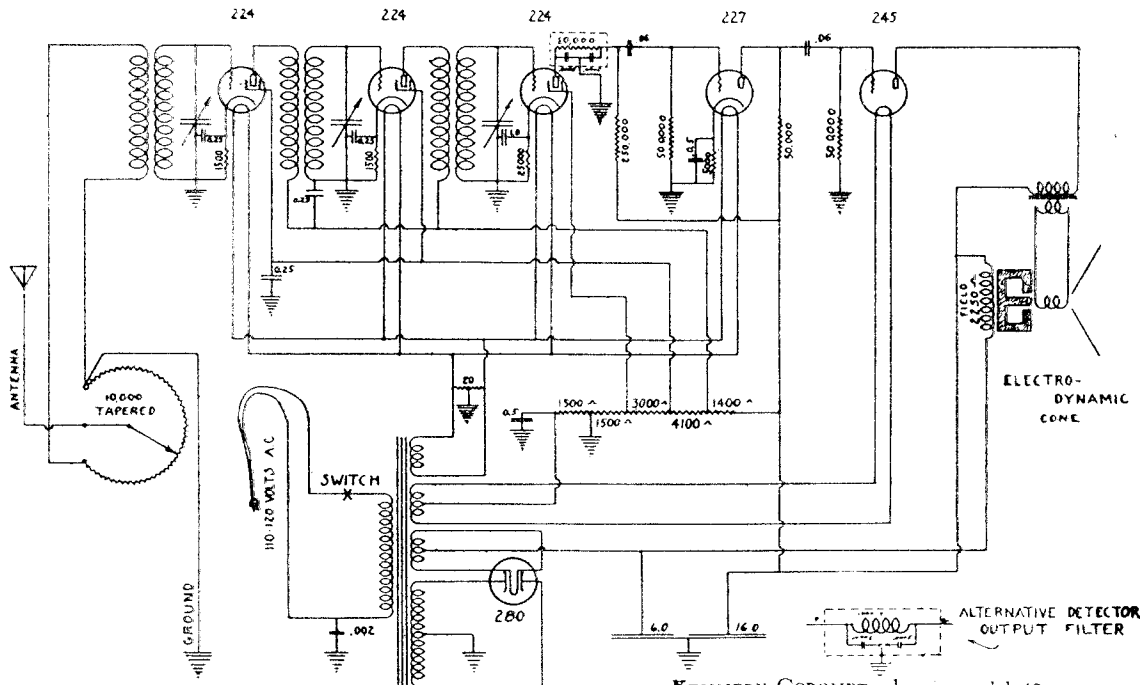
The ground wire is connected to the ground post of the short wave unit, as formerly indicated.

The antenna is now connected to the wire leading from the changeover switch.

COLIN B. KENNEDY CORP

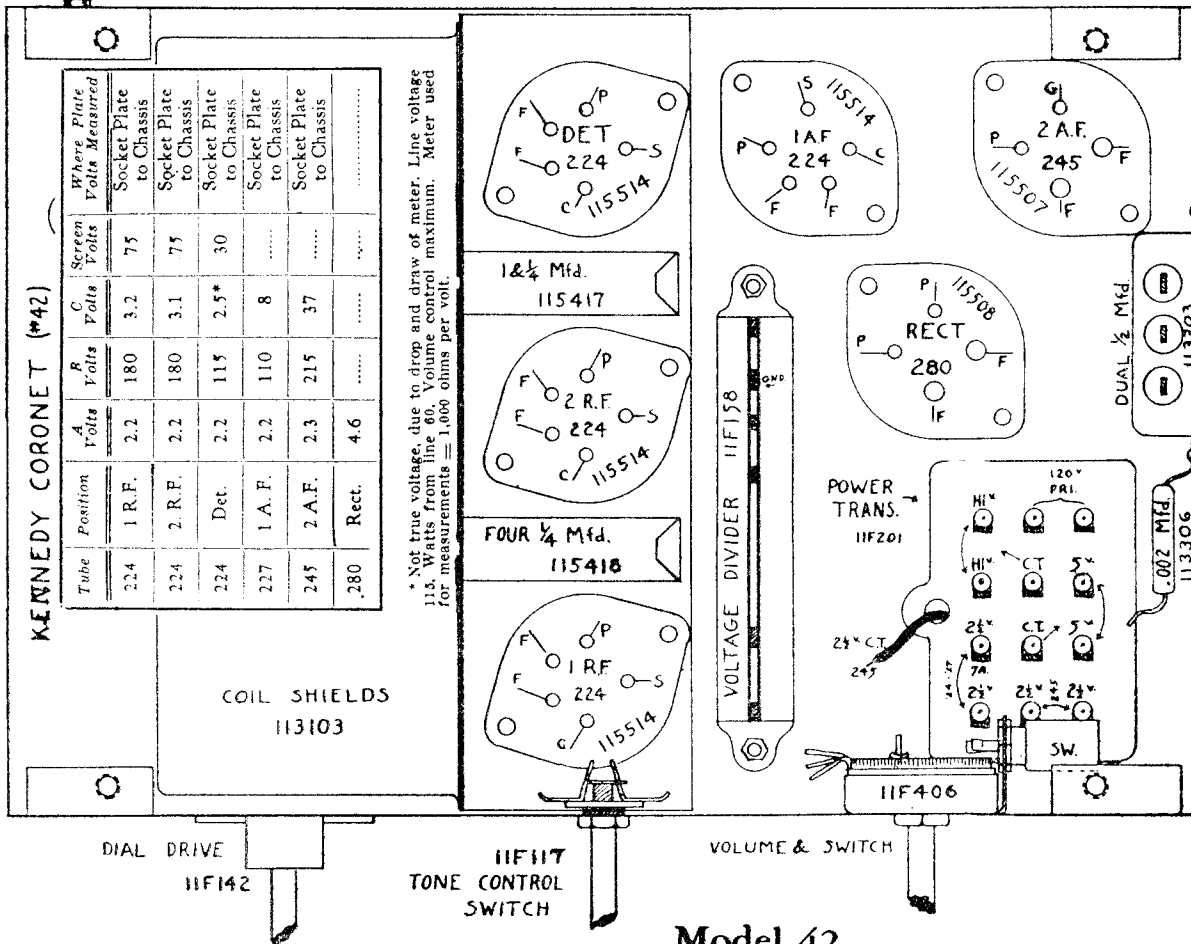
MODEL Coronet 42
Schematic
Chassis, Voltage

MODEL 42 110-120 VOLT A.C.



KENNEDY CORONET, chassis model 42

ANT-GND POSTS 115197



Tube	Position	A Volts	B Volts	C Volts	Screen Volts	Where Plate Volts Measured
224	1 R.F.	2.2	180	3.2	75	Socket Plate to Chassis
224	2 R.F.	2.2	180	3.1	75	Socket Plate to Chassis
224	Det.	2.2	115	2.5*	30	Socket Plate to Chassis
227	1 A.F.	2.2	110	8	.....	Socket Plate to Chassis
245	2 A.F.	2.3	215	37	.....	Socket Plate to Chassis
280	Rect.	4.6	.....	.....	.....	.....

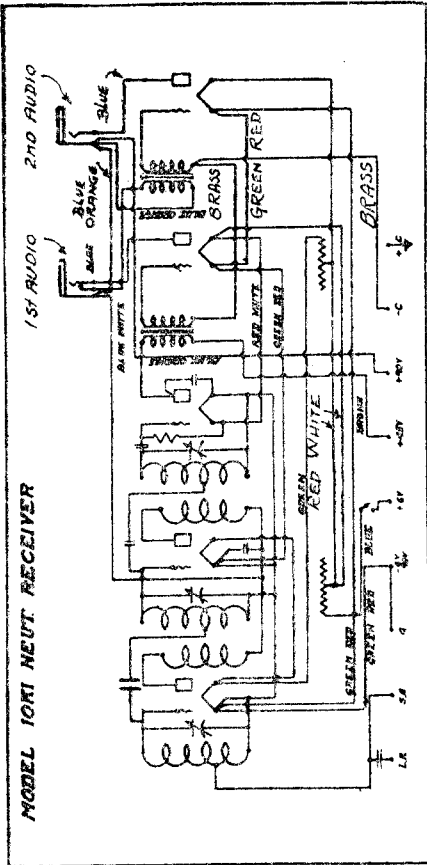
* Not true voltage, due to drop and draw of meter. Line voltage 115. Watts from line 60. Volume control maximum. Meter used for measurements = 1,000 ohms per volt.

Model 42

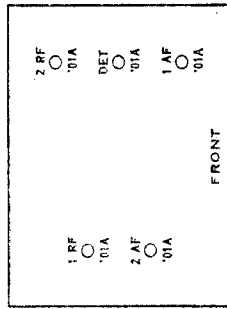
KING MFG. CORP.

MODEL 10 KI, 10 SK
 MODEL 25
 MODEL 30

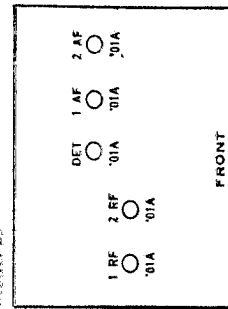
MODEL 10 KI NEUT RECEIVER



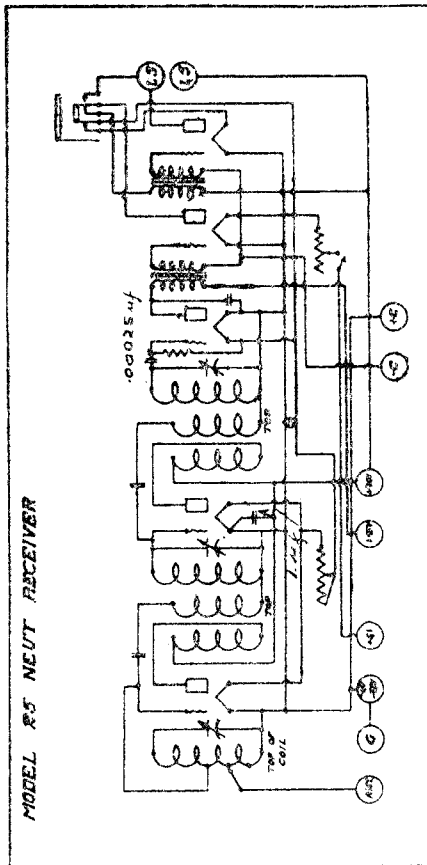
Models 10KI, 10SK



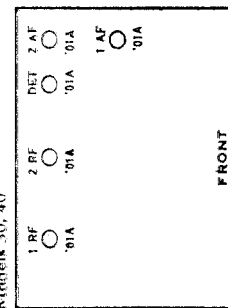
Model 25



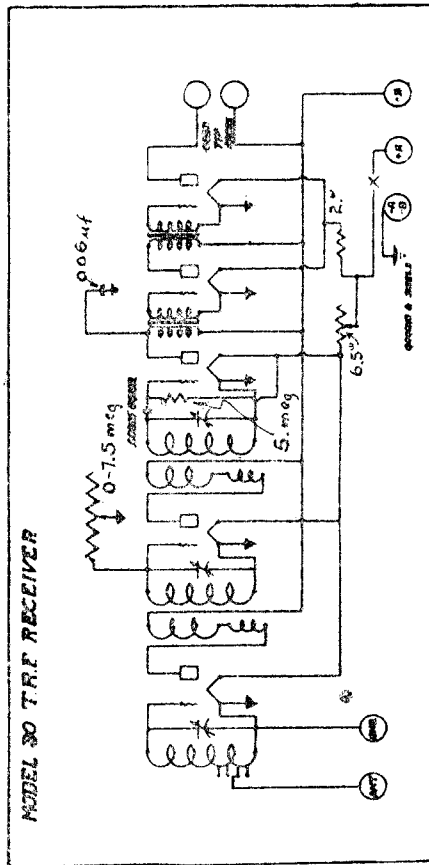
MODEL 25 NEUT RECEIVER



Models 30, 40

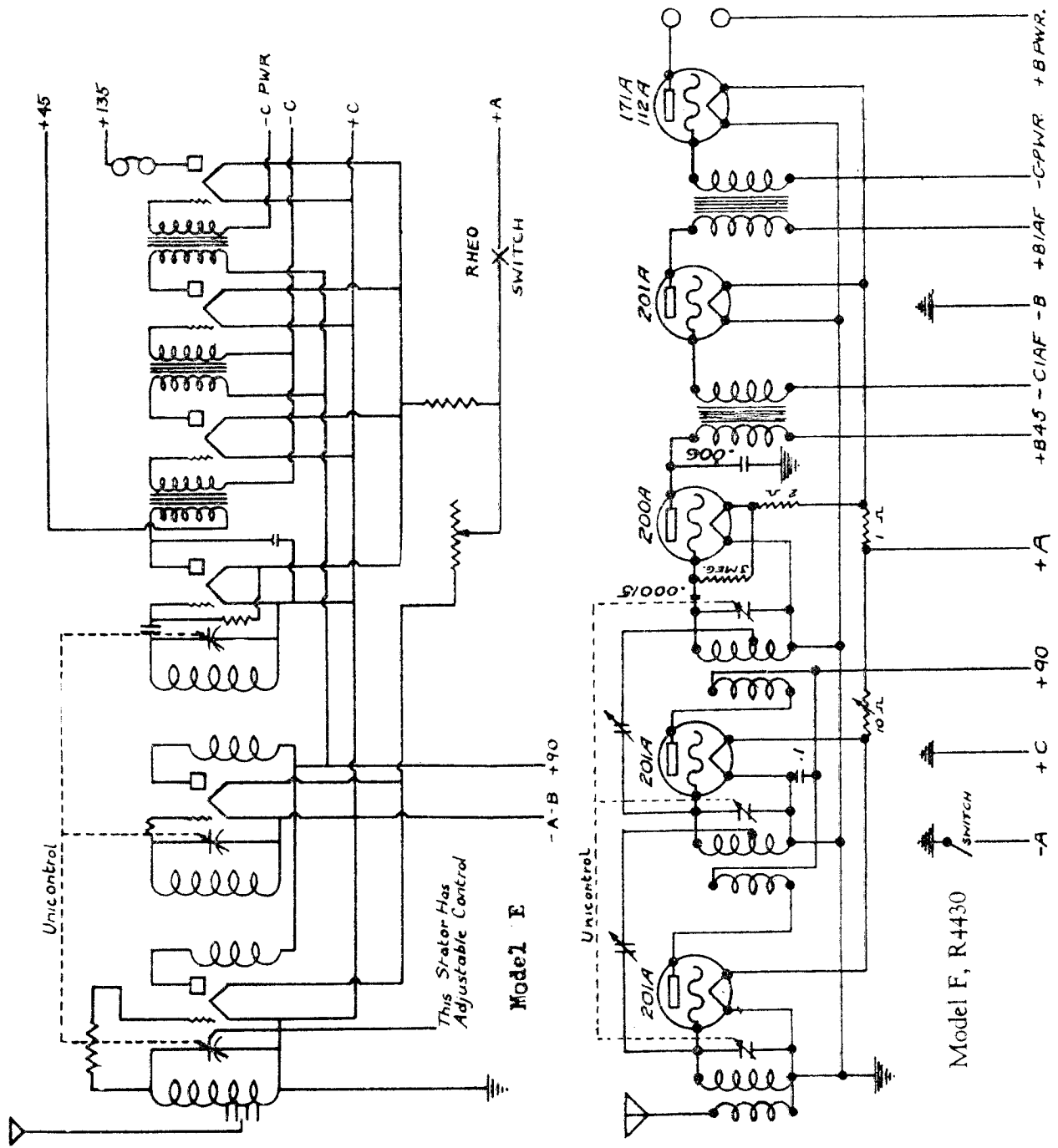


MODEL 30 T.R.F. RECEIVER



KING MFG. CORP.

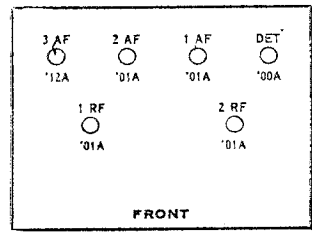
MODEL E
MODEL F



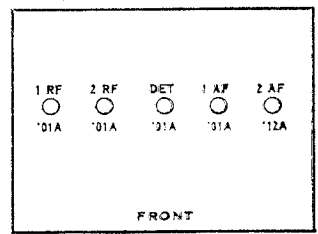
Model E

Model F, R4430

Models OE, E, 80, 80A

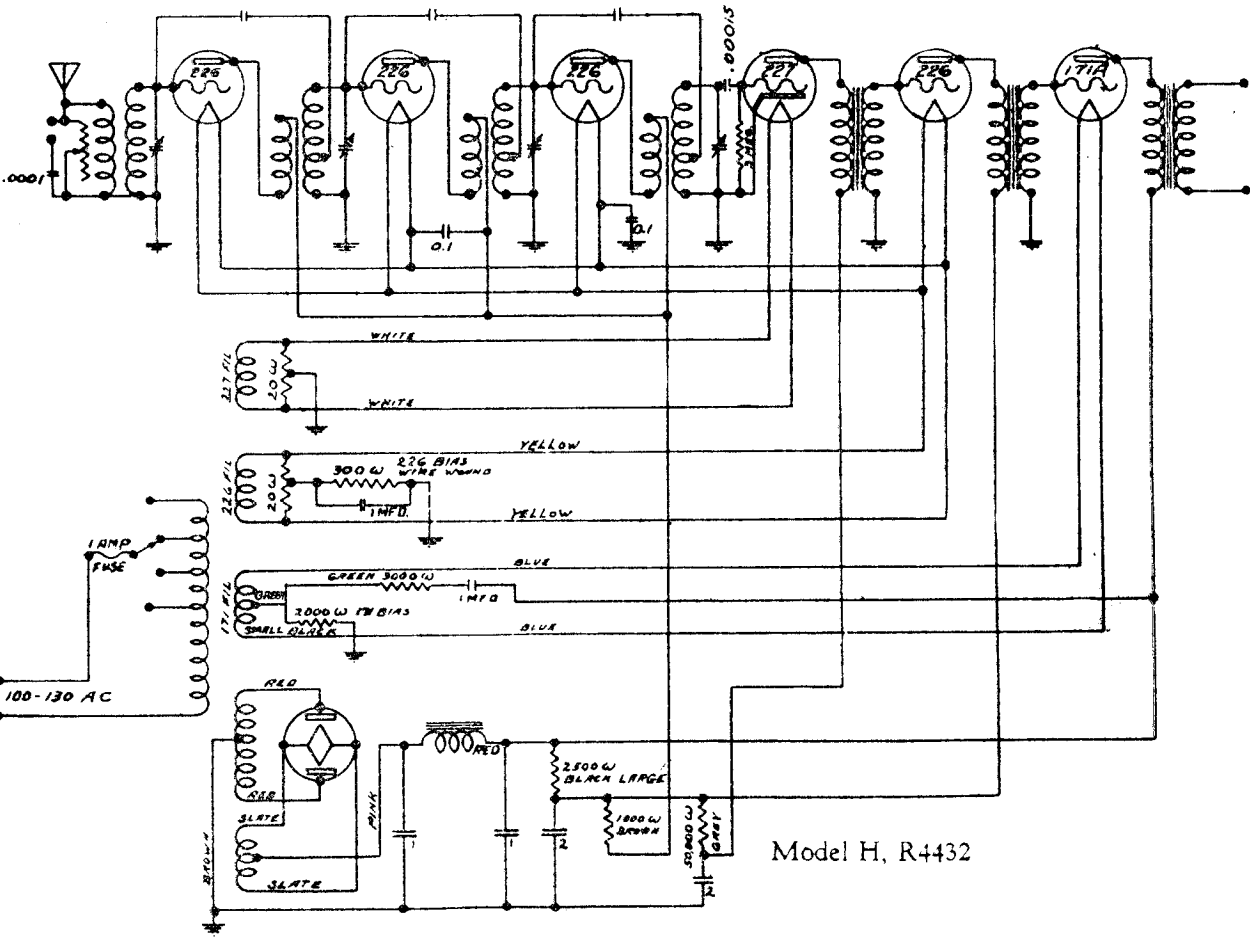
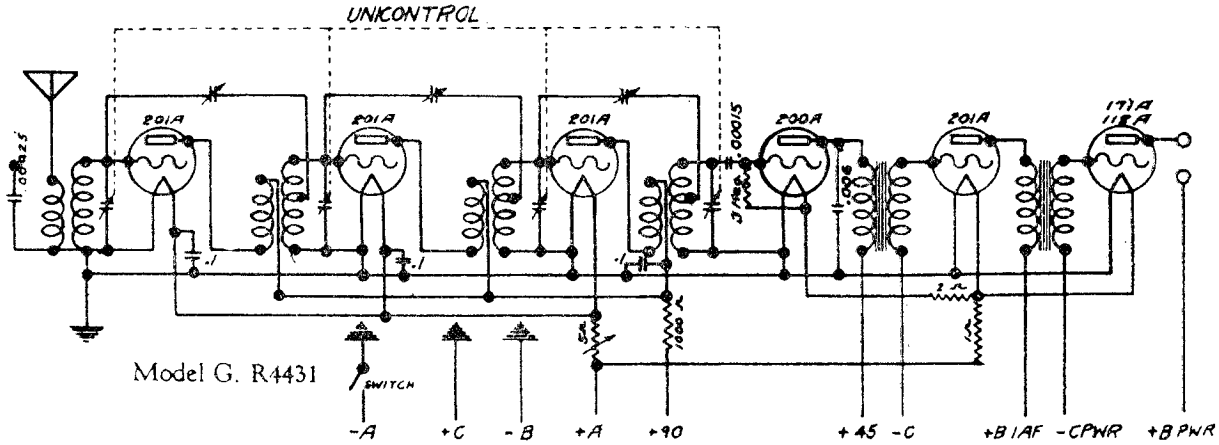


Model F

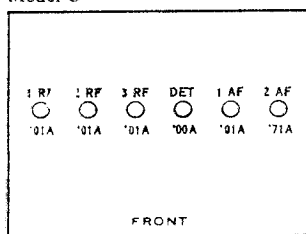


KING MFG. CORP.

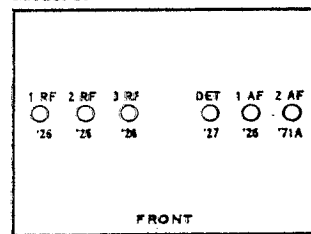
MODEL G
MODEL H



Model G

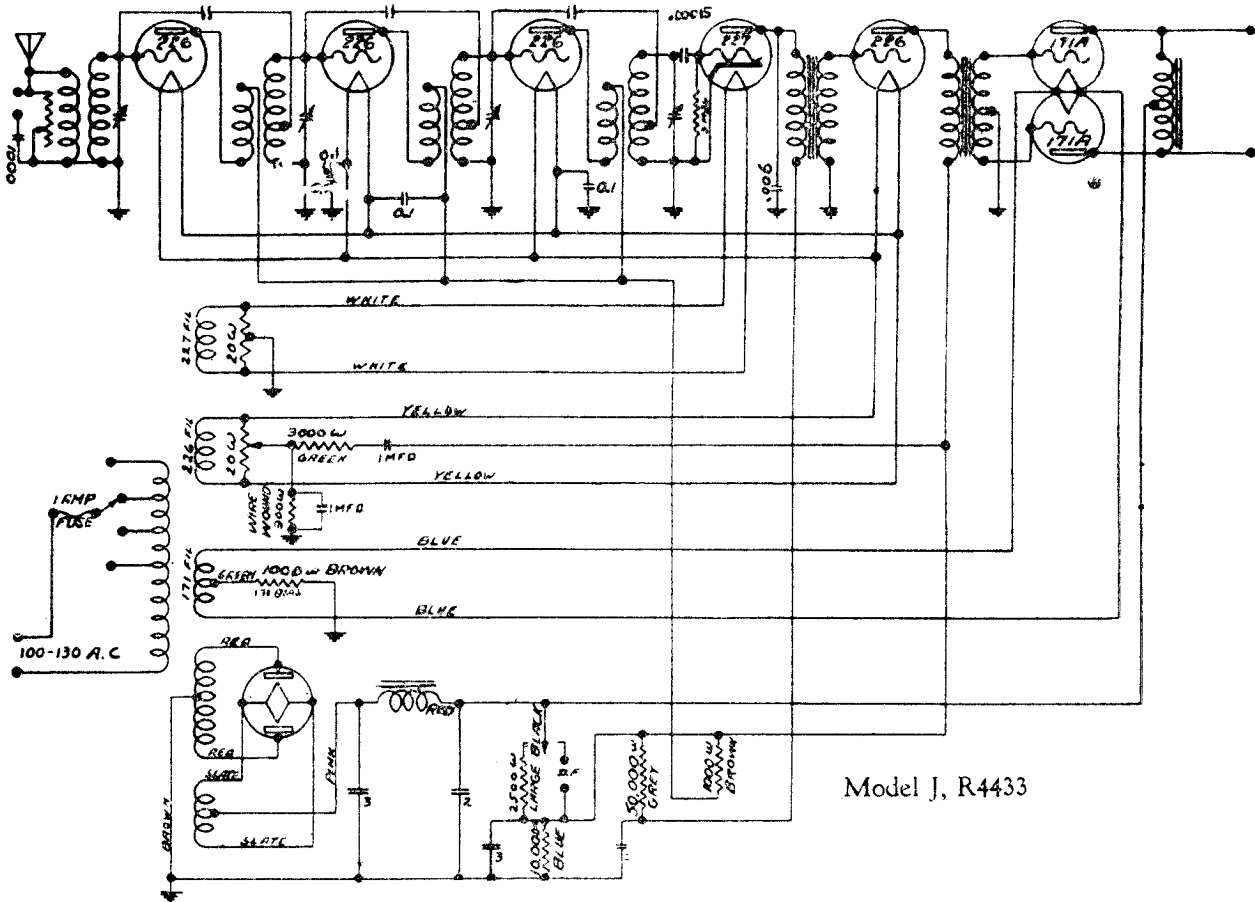


Model H

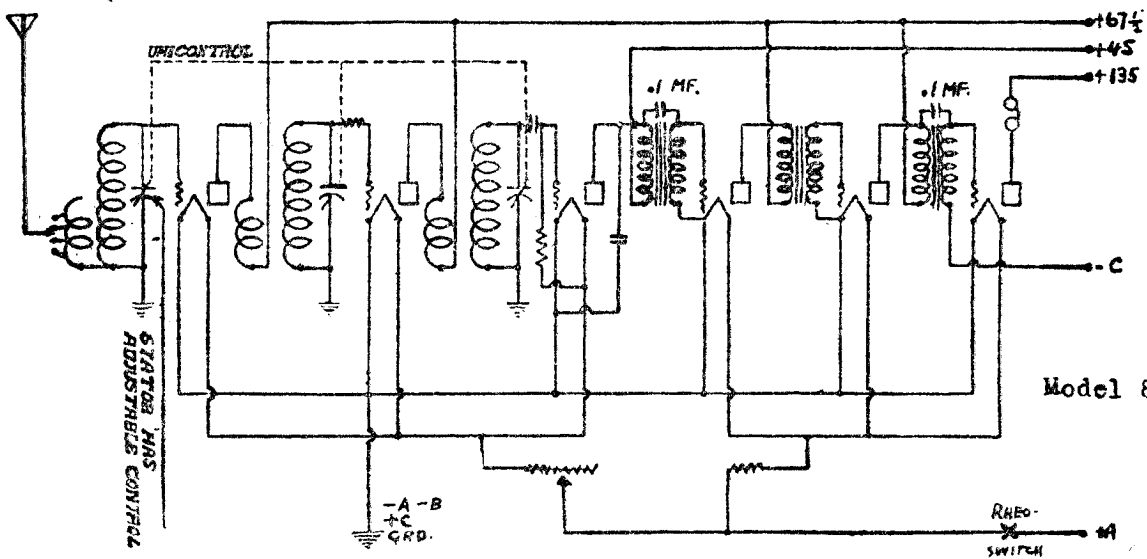


MODEL J
MODEL 80

KING MFG. CORP.

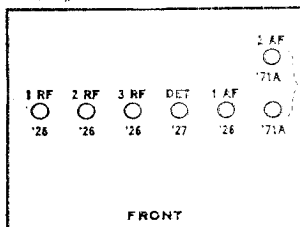


Model J, R4433



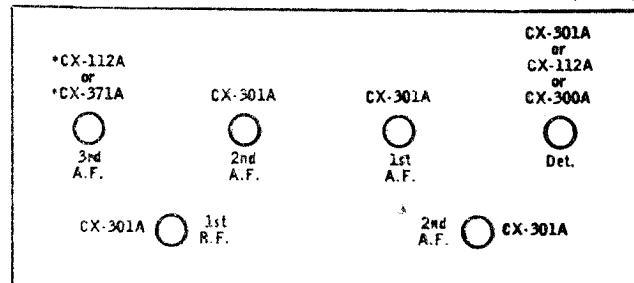
Model 80

Model J



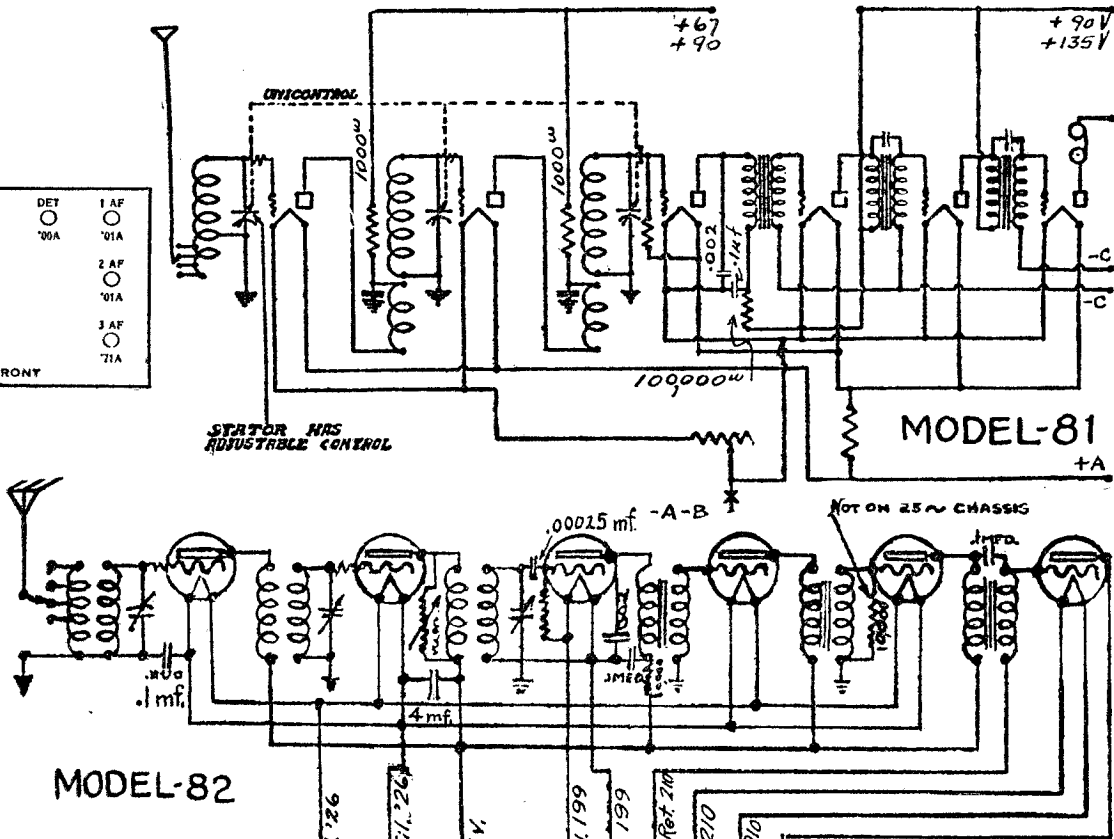
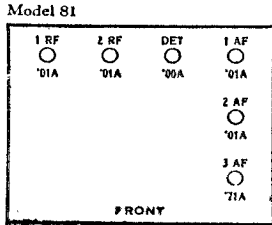
80

(Batt.)

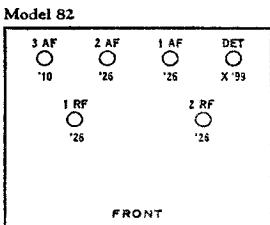
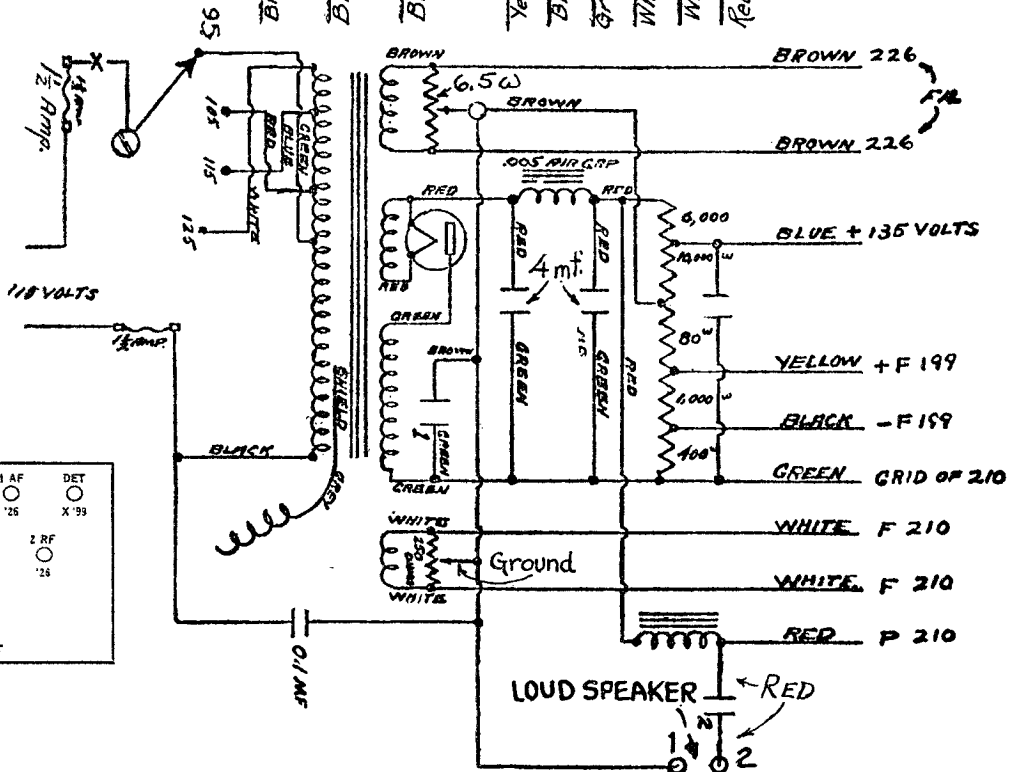


KING MFG CORP.

MODEL 81
MODEL 82

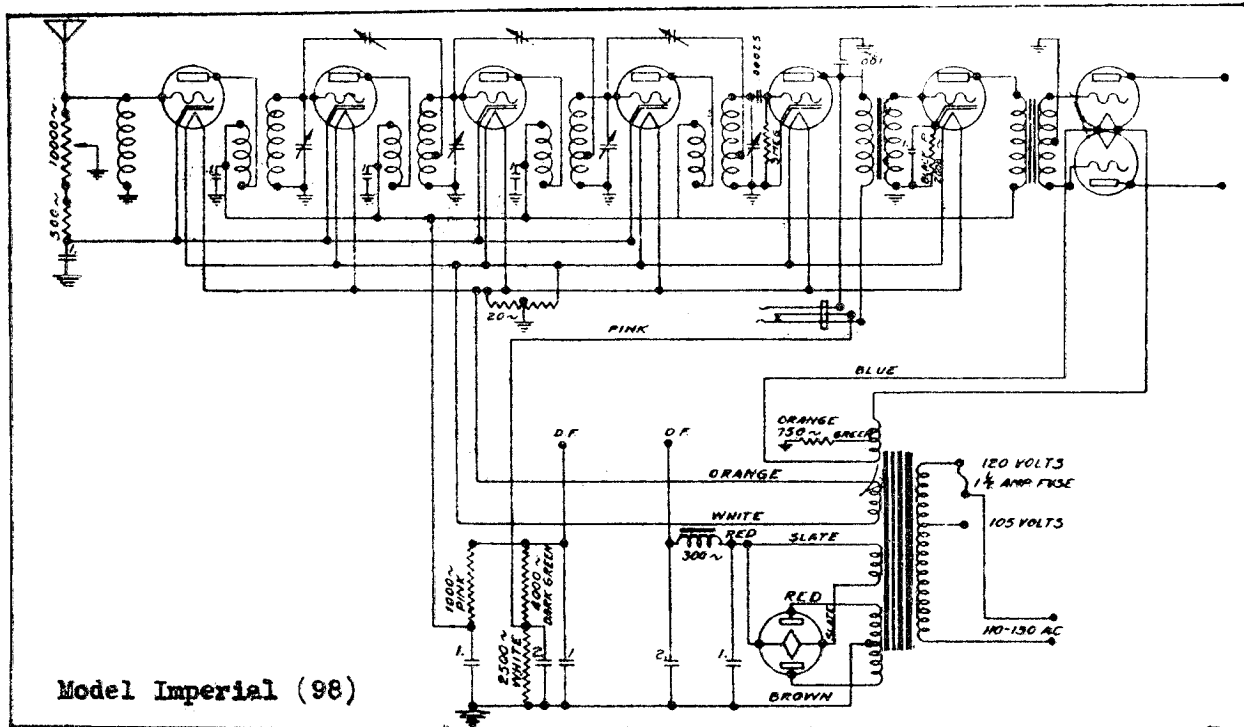
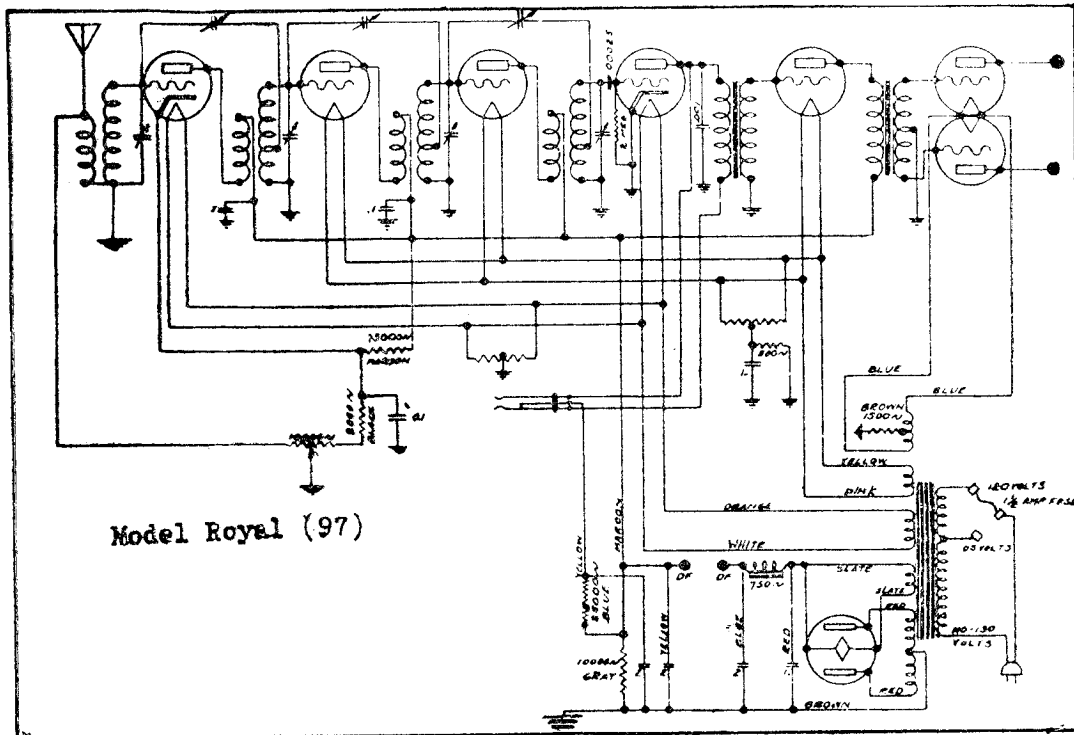


MODEL-82



MODEL ROYAL (97)
MODEL IMPERIAL (98)

KING MFG. CORP.



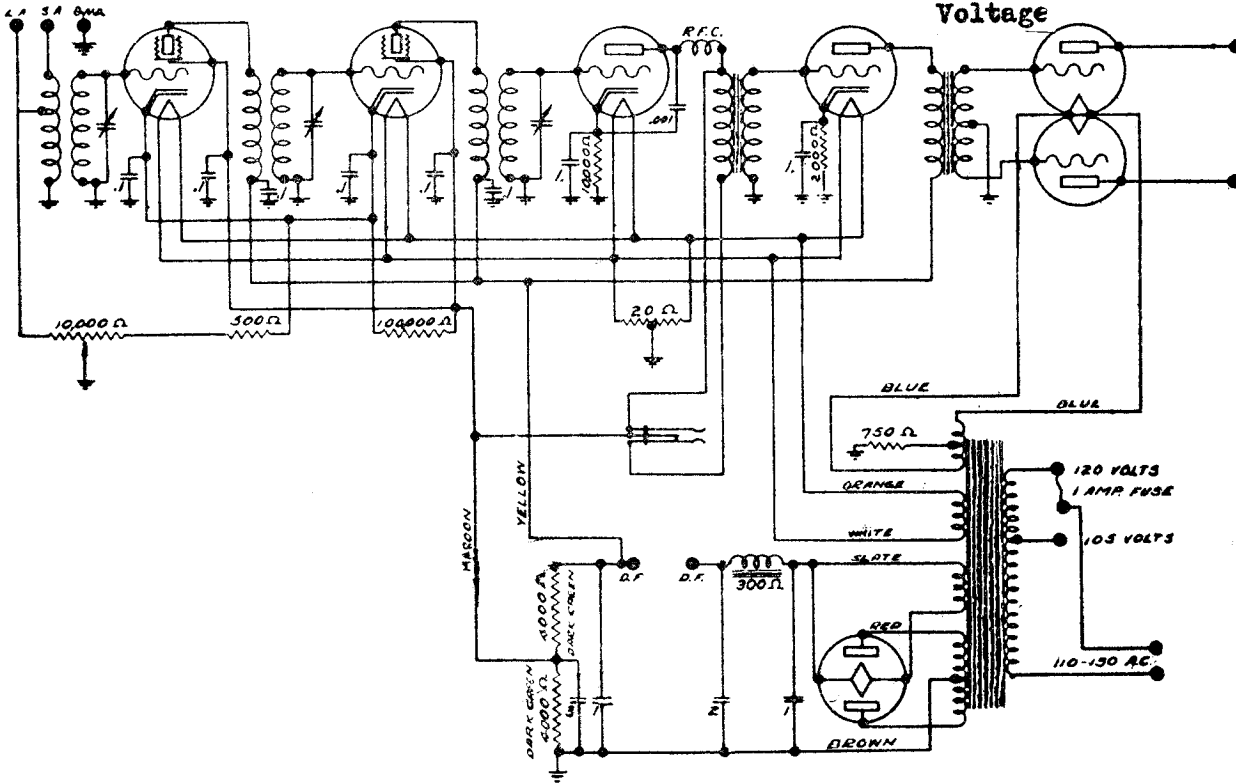
97 (A.C.) 98 (A.C.)

					CX-371A
					○
					2nd A.F.
C-327	CX-326	CX-326	C-327	CX-326	CX-371A
○	○	○	○	○	○
1st R.F.	2nd R.F.	3rd R.F.	Det.	1st A.F.	2nd A.F.

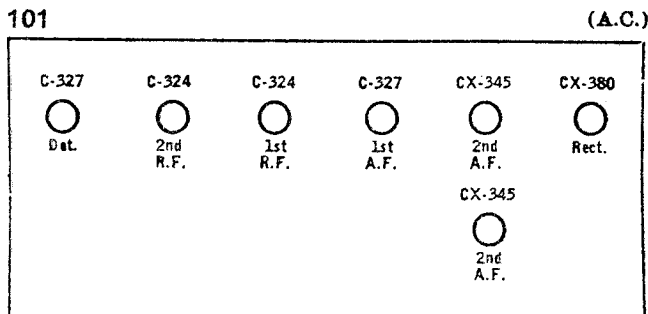
											CX-345
											○
											2nd A.F.
C-327	C-327	C-327	C-327	C-327	C-327	CX-345					○
○	○	○	○	○	○						○
2nd R.F.	3rd R.F.	4th R.F.	Det.	1st A.F.	2nd A.F.						

KING MFG. CORP.

MODEL Monarch (101)
Schematic - Voltage
MODEL Royal (97)
Voltage



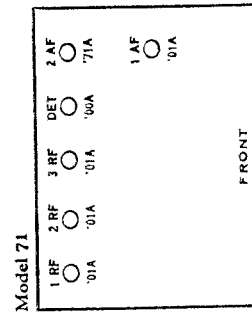
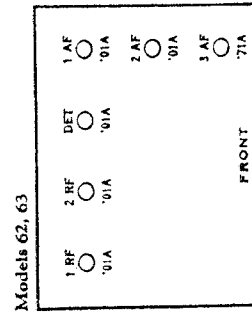
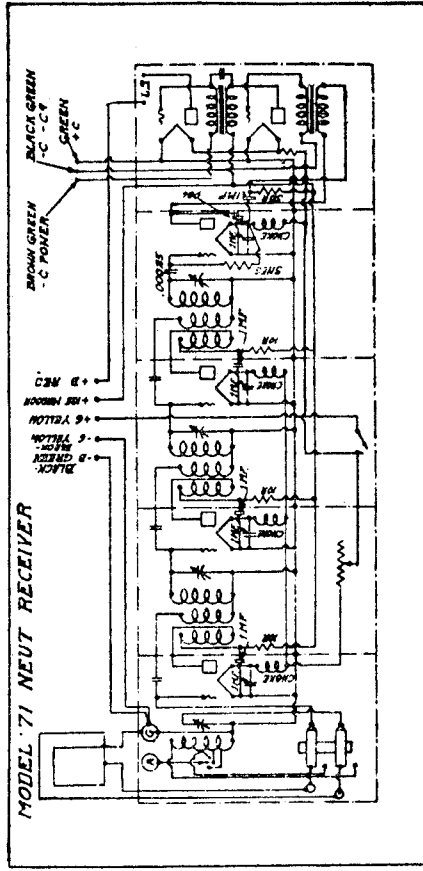
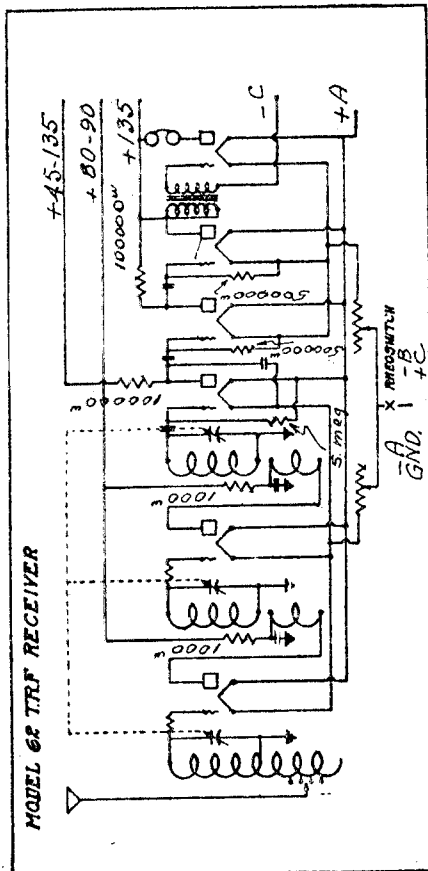
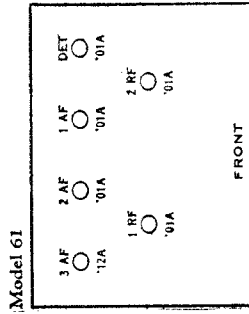
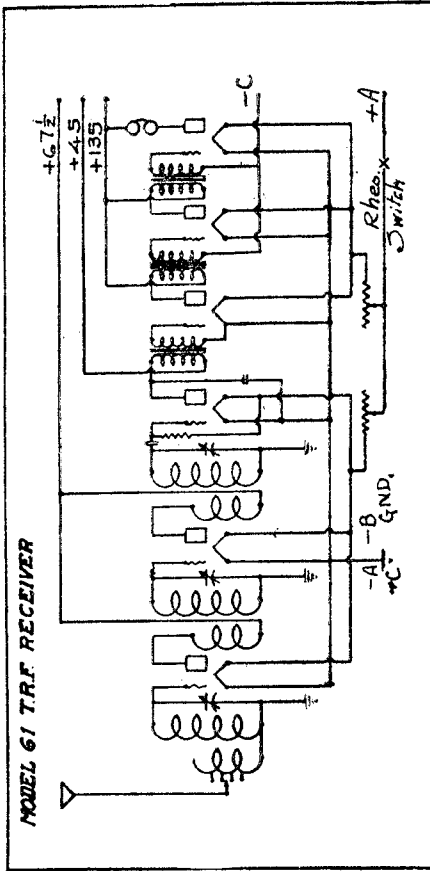
MONARCH Model 101.						
Tube	Stage	Fil. V.	Plate V.	Screen. Grid V.	Control Grid V.	
'24	1 R.F.	2.5	180	85	3.5	
'24	2 R.F.	2.5	180	85	3.5	
'27	Det.	2.5	90	-----	10.	
'27	1 A.F.	2.5	170	-----	13.	
'45	2 A.F.	2.5	220	-----	50.	
'45	2 A.F.	2.5	220	-----	50.	



Model 97 Line: 105 Volts.						
Tube	Stage	Fil. V.	Plate V.	Grid V.	Cath. V.	
'27	1 R.F.	2.4	136	11.	-----	
'26	2 R.F.	1.6	136	10		
'26	3 R.F.	1.6	136	10		
'27	Det.	2.4	52	-----	-----	
'26	1 A.F.	1.6	127	8.		
'71	2 A.F.	5.1	184	36		
'71	2 A.F.	5.1	184	36		

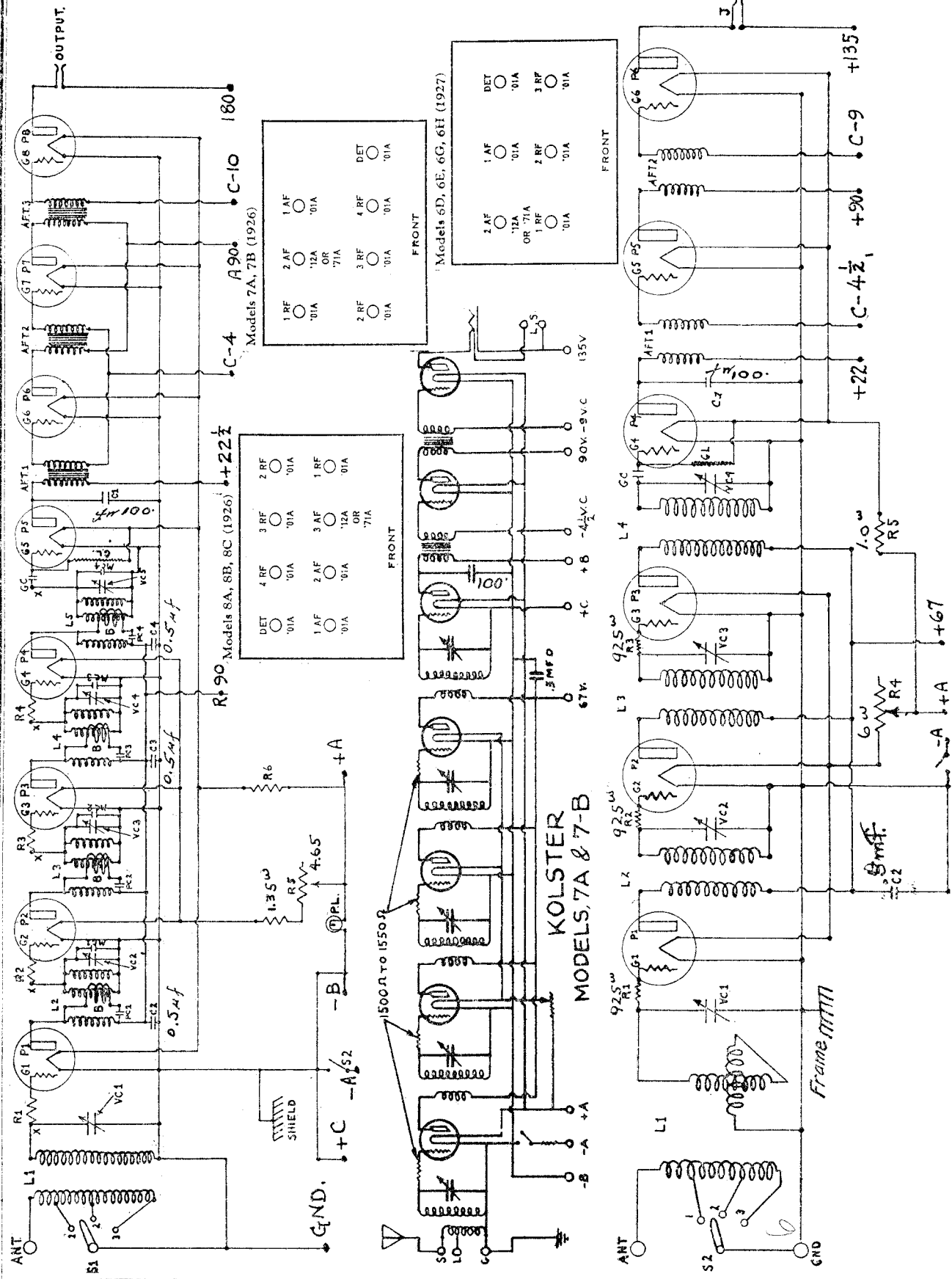
MODEL 61
 MODEL 62,63
 MODEL 71

KING MFG. CORP.



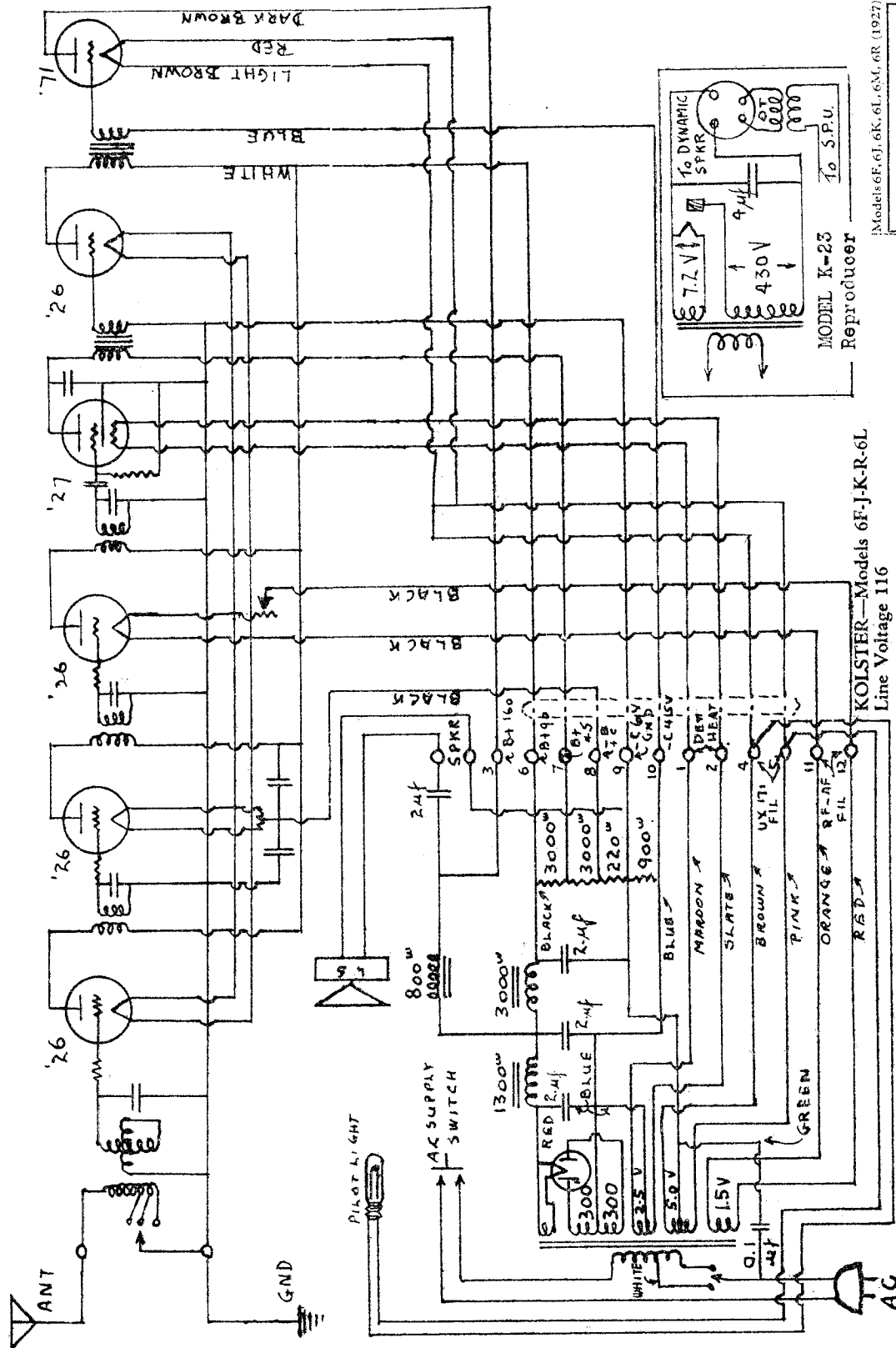
KOLSTER RADIO, INC.

MODELS 6D, 6E, 6G, 6H (1927)
 MODELS 7A, 7B (1928)
 MODELS 8A, 8B, 8C (1926)



KOLSTER RADIO, INC.

MODEL 6-F, 6-J, 6-K
6-L, 6-M, 6-R
MODEL K-23
Reproducer
Schematic



Models 6-F, 6-J, 6-K, 6-L, 6-M, 6-R (1927)

MODEL K-23
Reproducer

KOLSTER—Models 6F-J-K-R-6L
Line Voltage 116

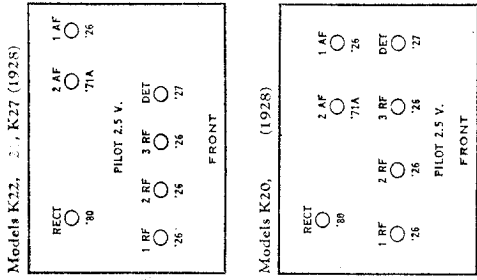
TYPE NO. TUBE	POSITION OF SOCKET	TUBE OUT		MEASURED PLUG IN SOCKET OF SET		TUBE IN TESTER	
		VOLTS	WATTS	VOLTS	WATTS	VOLTS	WATTS
226	1RF	1.0	1.00	1.0	1.00	1.0	1.00
226	2RF	1.5	1.50	1.5	1.50	1.5	1.50
226	3RF	1.5	1.50	1.5	1.50	1.5	1.50
227	1AF	1.5	1.50	1.5	1.50	1.5	1.50
271	2AF	3.5	3.50	3.5	3.50	3.5	3.50
250	REPLICATOR	-	-	5.0	5.00	-	-

Model 6-F, 6-J, 6-K
6-L, 6-M, 6-R

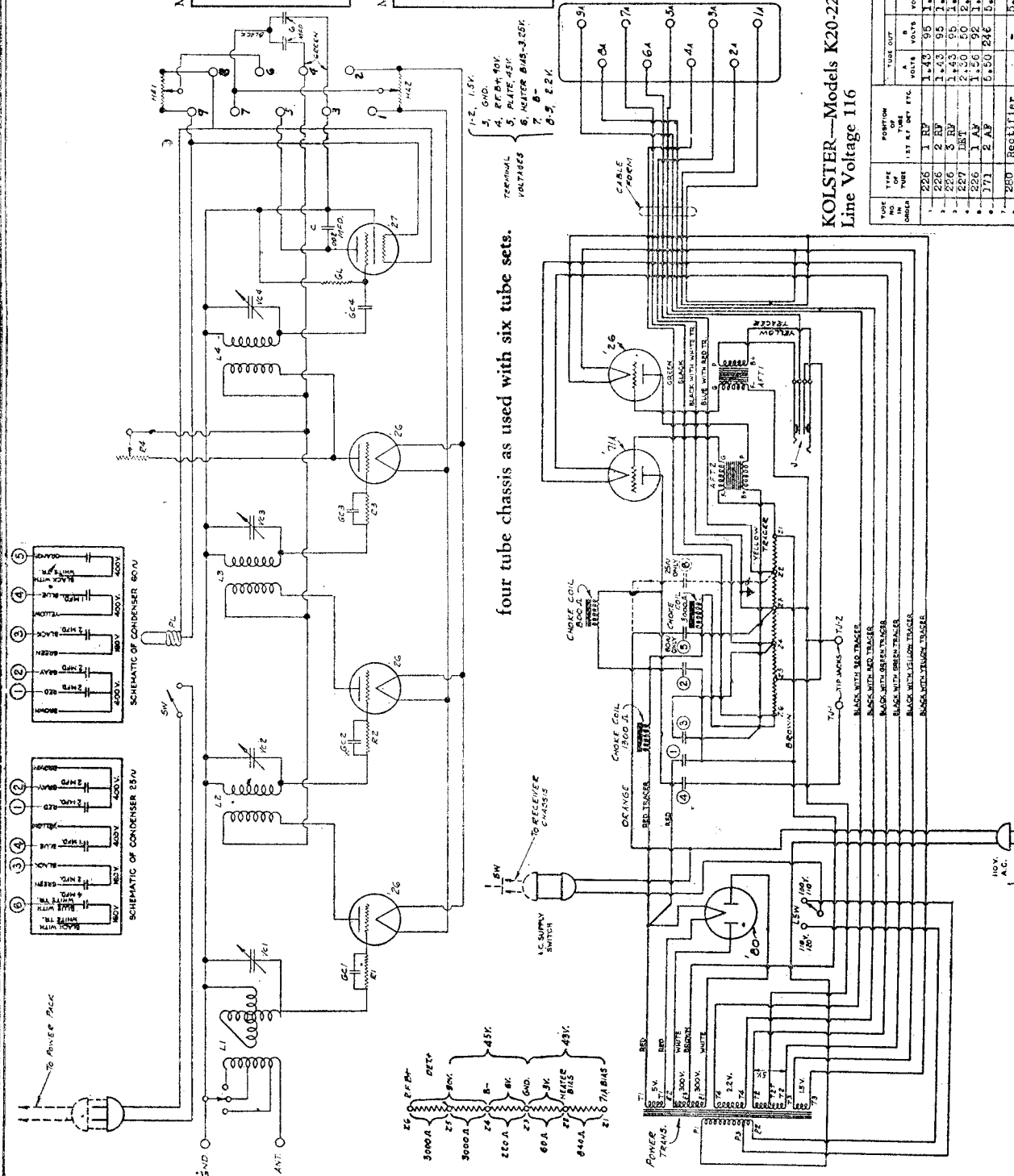
FRONT

MODEL K-20, K-22, K-27
Schematic, Voltage

KOLSTER RADIO, INC.

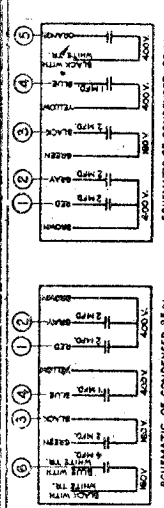


four tube chassis as used with six tube sets.



KOLSTER—Models K20-22-27-37
Line Voltage 116

TUBE NO. IN ORDER	TYPE	POSITION	TUBE DUTY		TUBE IN TESTER		TUBE IN TESTER		TUBE IN TESTER	
			HOURS	PERCENT	VOLTS	MA	VOLTS	MA	VOLTS	MA
1	226	1 RF	1,43	95	1,35	89	6.0	3.25	6.0	3.25
2	226	2 RF	1,43	95	1,35	89	6.0	3.25	6.0	3.25
3	226	3 RF	1,43	95	1,35	89	6.0	3.25	6.0	3.25
4	227	DET	2,00	50	2,00	42	5.0	3.48	5.0	3.48
5	226	1 AF	1,56	92	1,48	86	5.5	3.08	5.5	3.08
6	271	2 AF	6,50	246	6,00	164	47.0	17.50	47.0	17.50
7	260	Rectifier	-	-	-	-	-	-	-	-

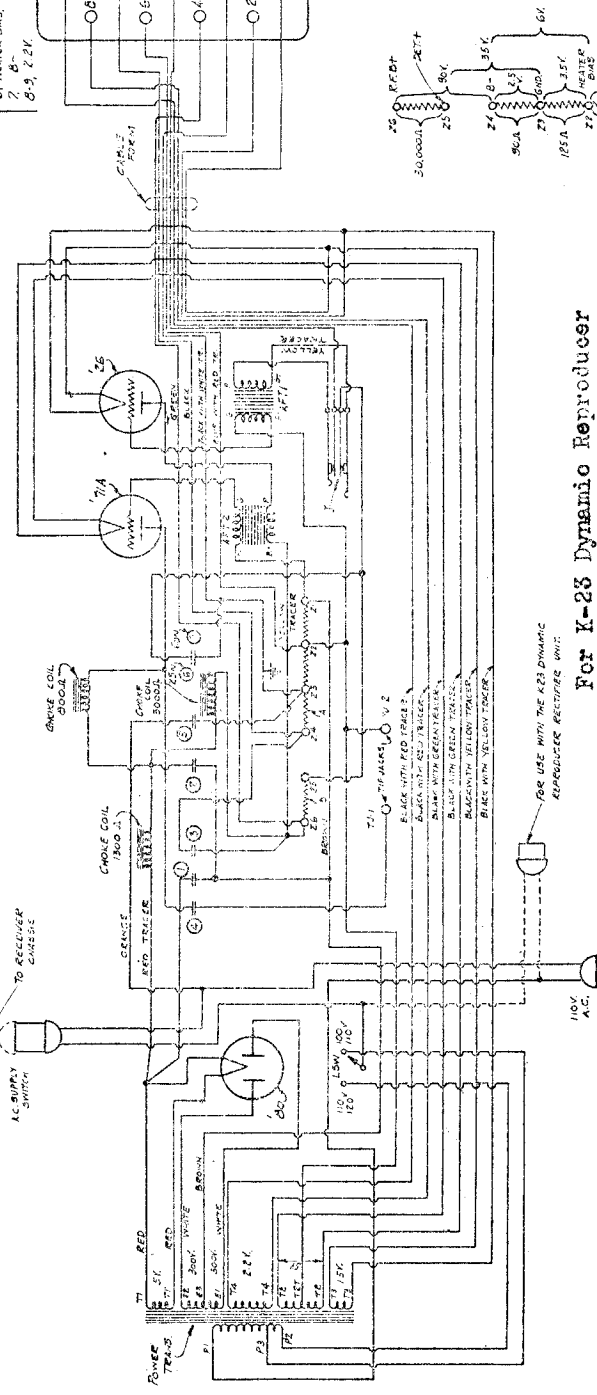
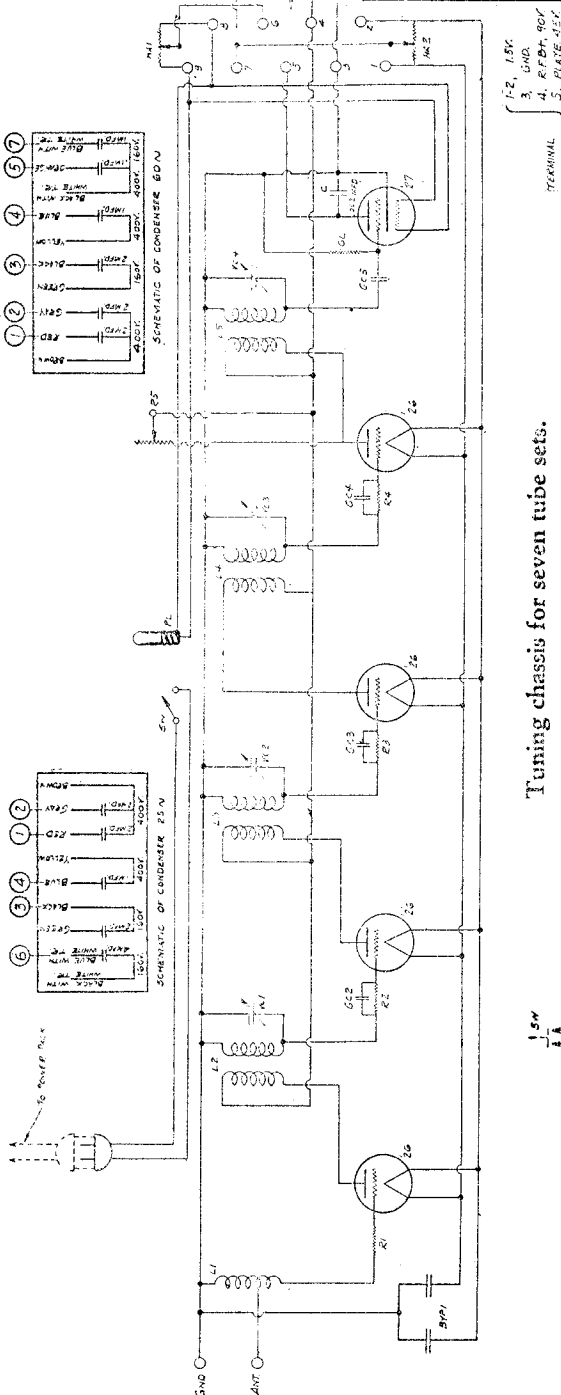
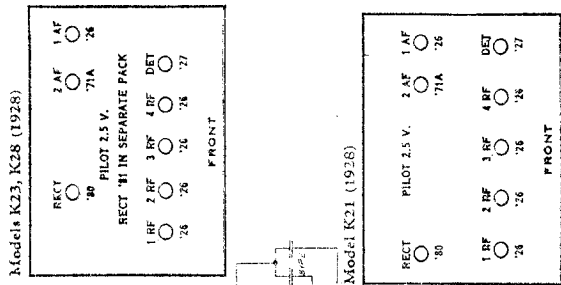


KOLSTER RADIO, INC.

MODEL K-21, K-23, K-28
Schematic, Voltage

KOLSTER—Models K21-23
Line Voltage 116

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET. ETC.	TUBE DATA					READINGS PLUG IN SOCKET OF SET		
			1	2	3	4	5	6	7	8	9
1	225	1st. R.F.	1.48	50	1.8	34	2.0	5.8	9.8	4.0
2	225	2nd. R.F.	1.48	50	1.4	34	2.5	5.8	9.8	4.0
3	225	3rd. R.F.	1.48	50	1.4	34	2.5	5.8	9.8	4.0
4	226	4th. R.F.	1.48	90	1.4	34	2.5	5.8	9.8	4.0
5	227	125T.	2.3	44	1.0	58	3.5	1.6	1.8	0
6	228	1st. A.	1.56	88	1.4	72	2.0	4.8	7.8	3.0
7	71A	2nd. A.	4.7	150	4.2	42	17			
8	180	Rect.	4.8							



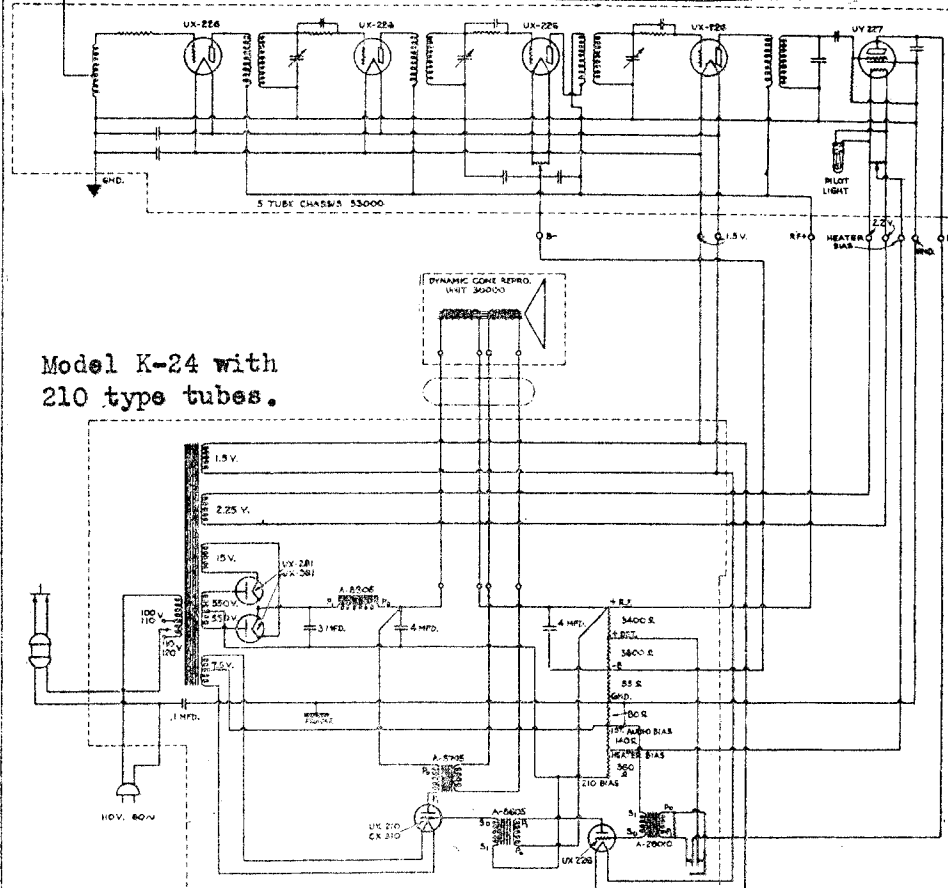
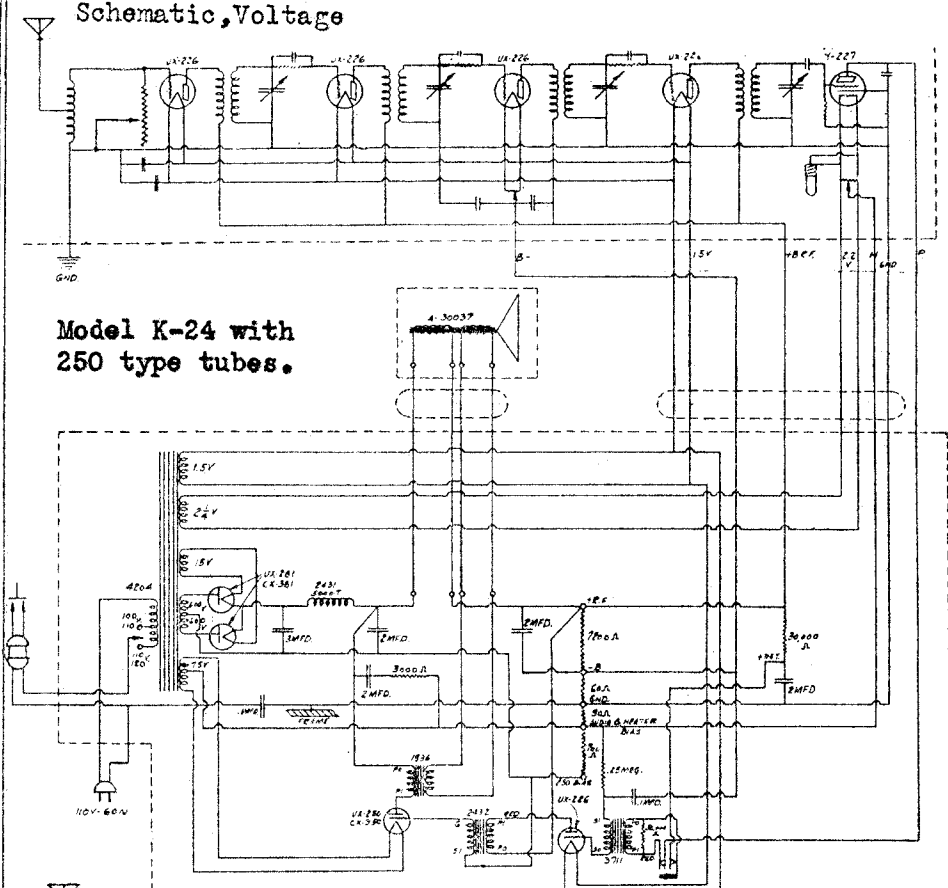
Tuning chassis for seven tube sets.

For K-23 Dynamic Reproducer
Rectifier See Index

Schematic diagram of seven tube receiver Power Pack and Audio Amplifier.

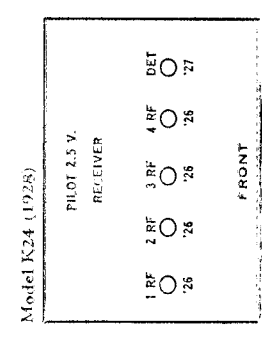
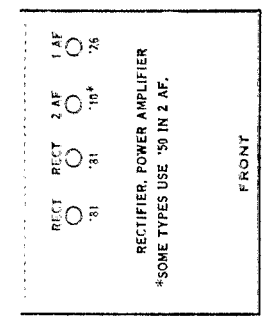
MODEL K-24(250)
MODEL K-24(210)
Schematic, Voltage

KOLSTER RADIO, INC.

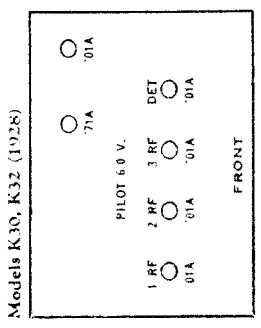
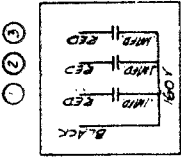
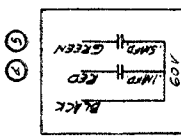
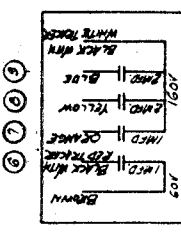
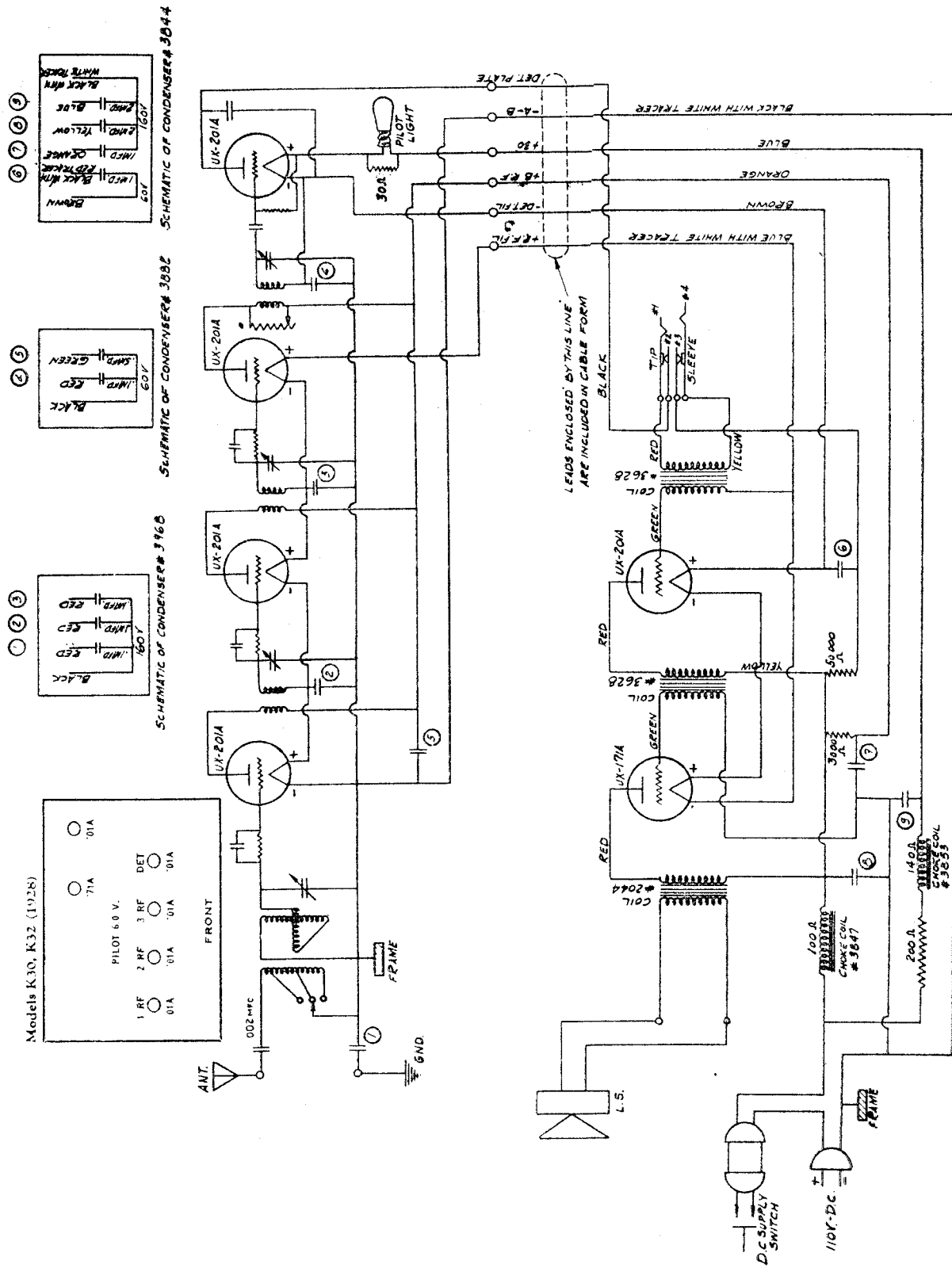


Line Voltage 116

TUBE TYPE IN OFFICE	POSITION IN SET	TUBE OUT					TUBE IN TESTER				
		1	2	3	4	5	1	2	3	4	5
225	1st. R.F.	1.48	80	1.4	84	2.5	5.8	9.8	4.0	5.8	
226	2nd. R.F.	1.48	80	1.4	84	2.5	5.8	9.8	4.0	5.8	
227	3rd. R.F.	1.48	90	1.4	84	2.5	5.8	9.8	4.0	5.8	
228	4th. R.F.	1.48	90	1.4	84	2.5	5.8	9.8	4.0	5.8	
229	1st. A.	2.0	44	2.0	36	3.5	1.6	1.6	0	1.6	
230	2nd. A.	1.86	88	1.4	72	2.0	4.8	7.8	3.0	4.8	
231	Rect.	7.9	512	7.4	430	32.5	24	25	4.0		
232	Rect.						28.0				
233	Rect.						28.0				



MODELS K-30, K-32 (1928) KOLSTER RADIO, INC.



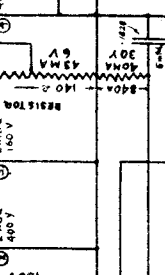
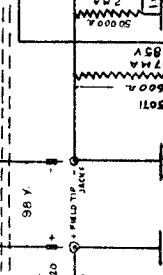
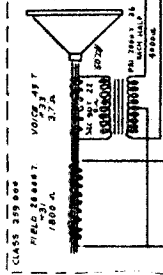
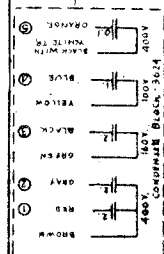
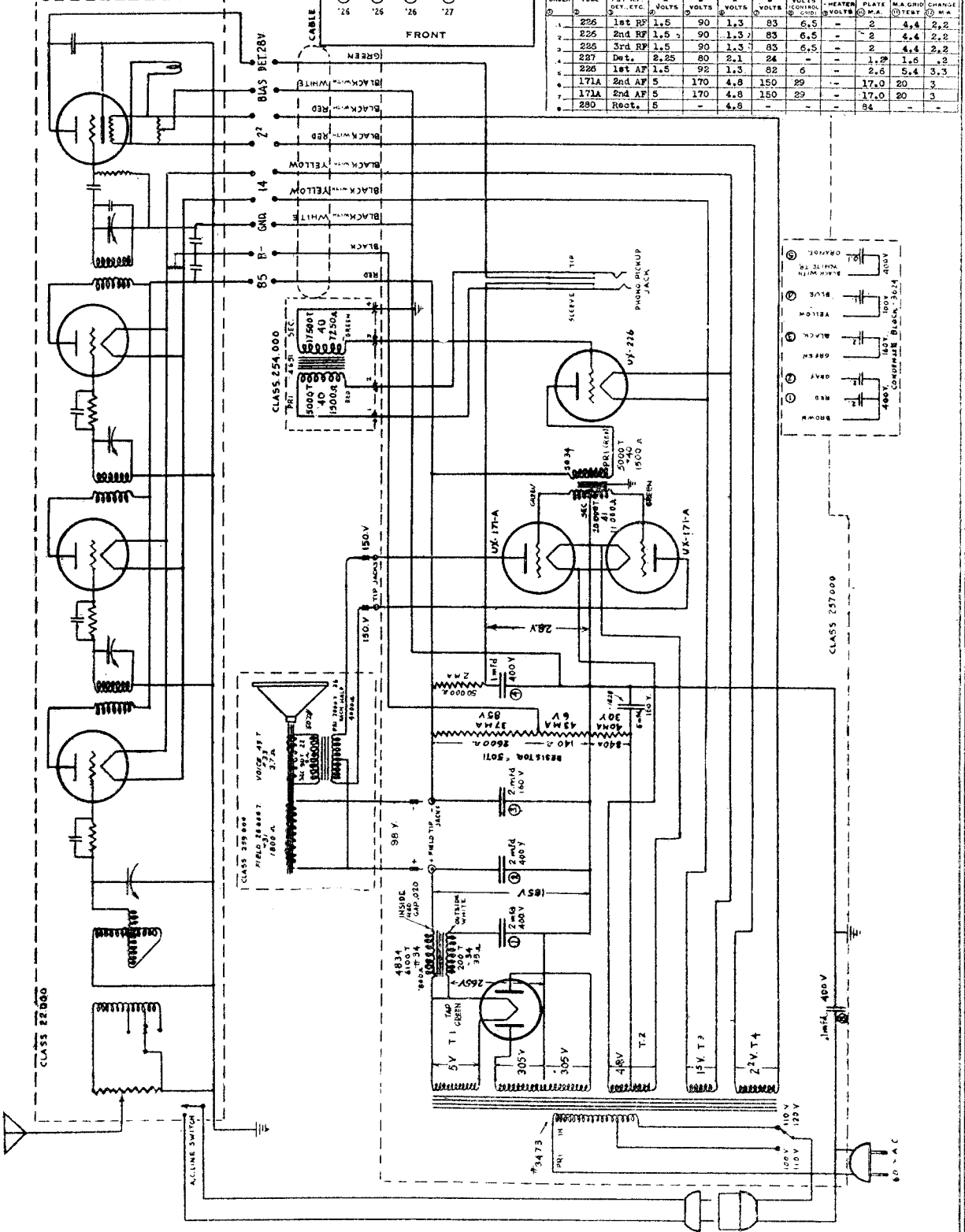
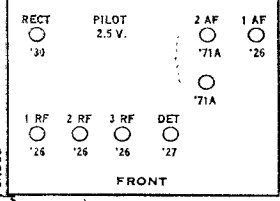
MODEL K-42
Schematic
Voltage

KOLSTER RADIO, INC.

Model K42 (1930)

KOLSTER—Model 42
Line Voltage 112—Volume Control Position Max
*Grid Leak Shorted

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE LEFT R.F. DET., ETC.	TUBE OUT				TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONTROL GRID)	HEATER (VOLTS)	NORMAL PLATE M.A.	PLATE M.A. GRID CHANGE	
1	226	1st RF	1.5	90	1.3	83	6.5	—	2	4.4	2.2
2	226	2nd RF	1.5	90	1.3	83	6.5	—	2	4.4	2.2
3	226	3rd RF	1.5	90	1.3	83	6.5	—	2	4.4	2.2
4	227	Det.	2.25	80	2.1	24	—	—	1.2	1.6	2
5	226	1st AF	1.5	92	1.3	82	6	—	2.6	5.4	3.3
6	171A	2nd AF	5	170	4.8	150	29	—	17.0	20	3
7	171A	2nd AF	5	170	4.8	150	29	—	17.0	20	3
8	280	Rect.	—	—	—	—	—	—	—	94	—



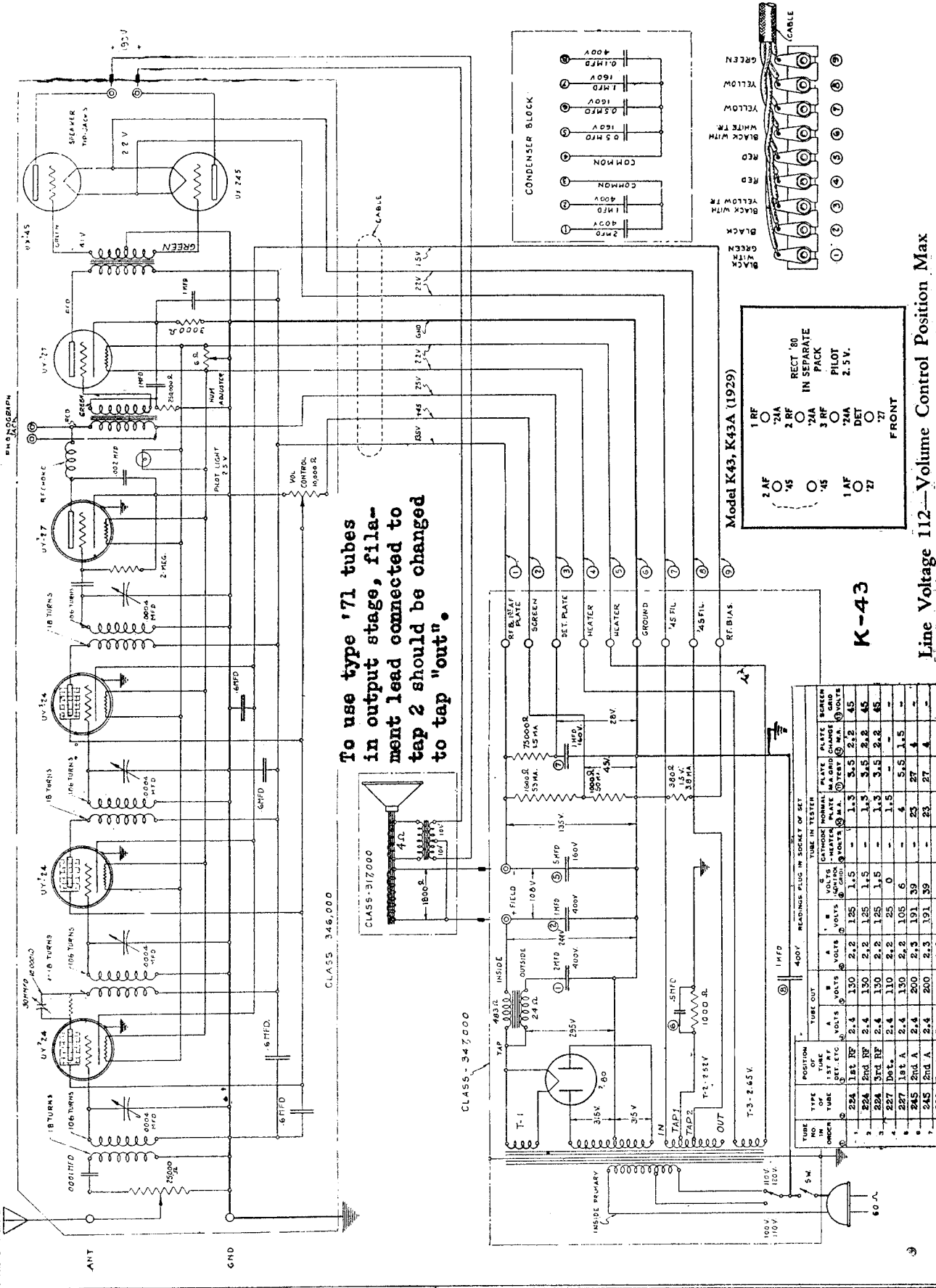
CLASS 254 000

CLASS 257 000

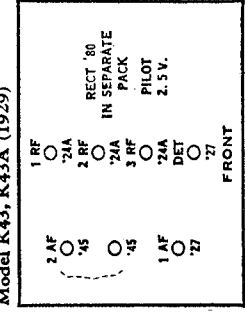
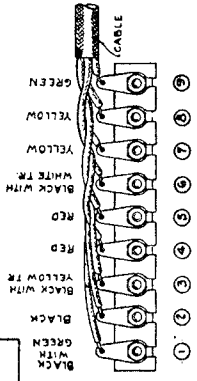
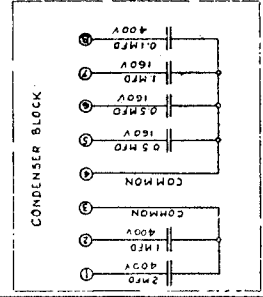
CLASS 22 000

KOLSTER RADIO, INC.

MODELS K-43, K-43A (1929)
Schematic, Voltage



To use type '71 tubes
in output stage, fila-
ment lead connected to
tap 2 should be changed
to tap "out".



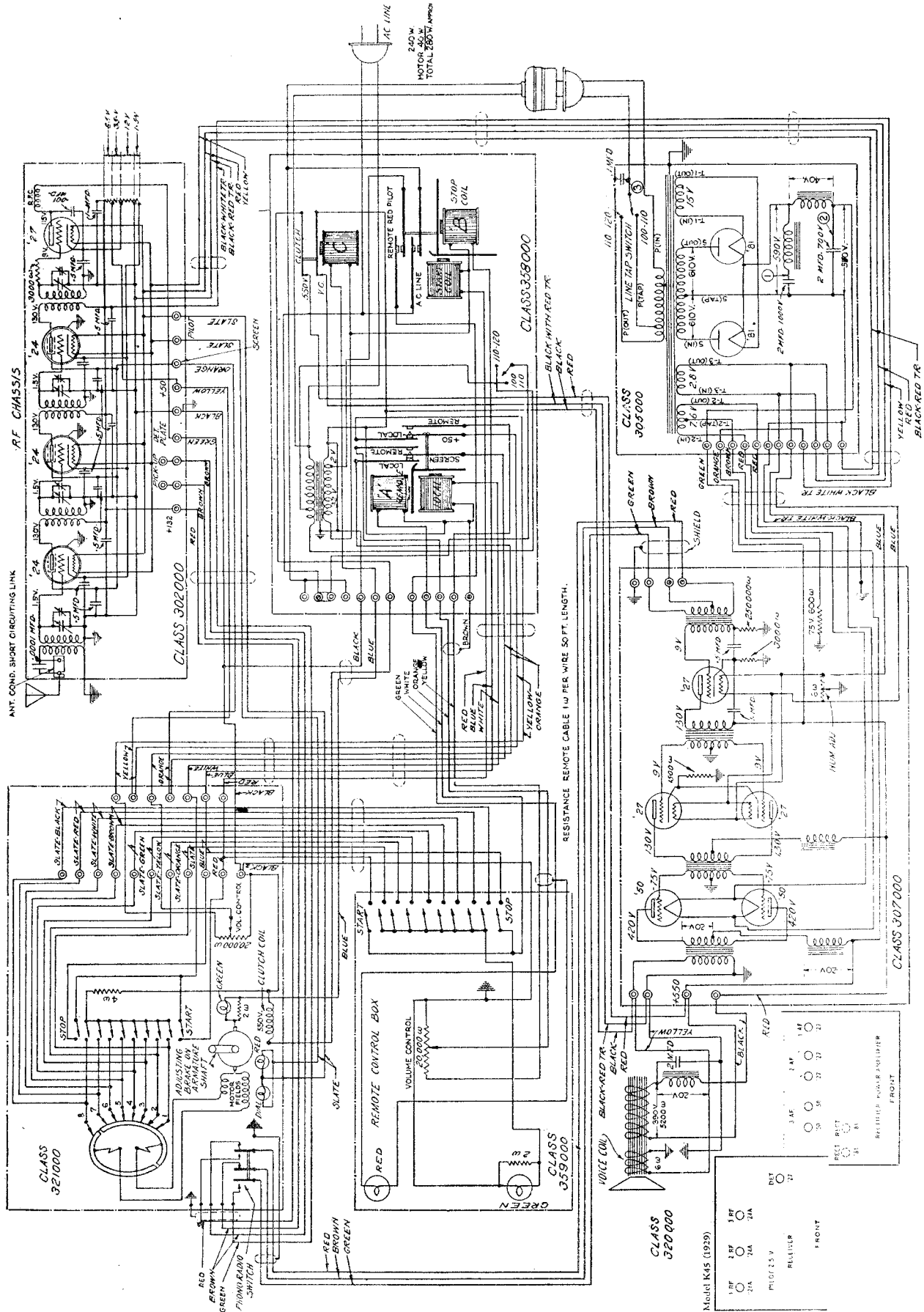
K-43

Line Voltage 112—Volume Control Position Max

TUBE ORDER	TYPE OF TUBE	POSITION	TAP IN TAPSTER				READINGS IN SOCKET OF SET				
			1ST RF	2ND RF	DET. ETC.	1ST AF	VOLTS	VOLTS	VOLTS	VOLTS	
1	224	1st RF	2.4	1.30	2.2	1.25	1.5	1.5	1.5	2.2	4.5
2	224	2nd RF	2.4	1.30	2.2	1.25	1.5	1.5	1.5	2.2	4.5
3	224	3rd RF	2.4	1.30	2.2	1.25	1.5	1.5	1.5	2.2	4.5
4	227	Det.	2.4	1.10	2.2	25	0	1.5	1.5	-	-
5	227	1st A.	2.4	1.30	2.2	105	6	4	5.5	1.5	-
6	245	2nd A.	2.4	200	2.3	191	39	-	23	27	4
7	245	2nd A.	2.4	200	2.3	191	39	-	23	27	4
8	280	Rect.	5	-	-	-	-	-	4.8	-	-

KOLSTER RADIO, INC.

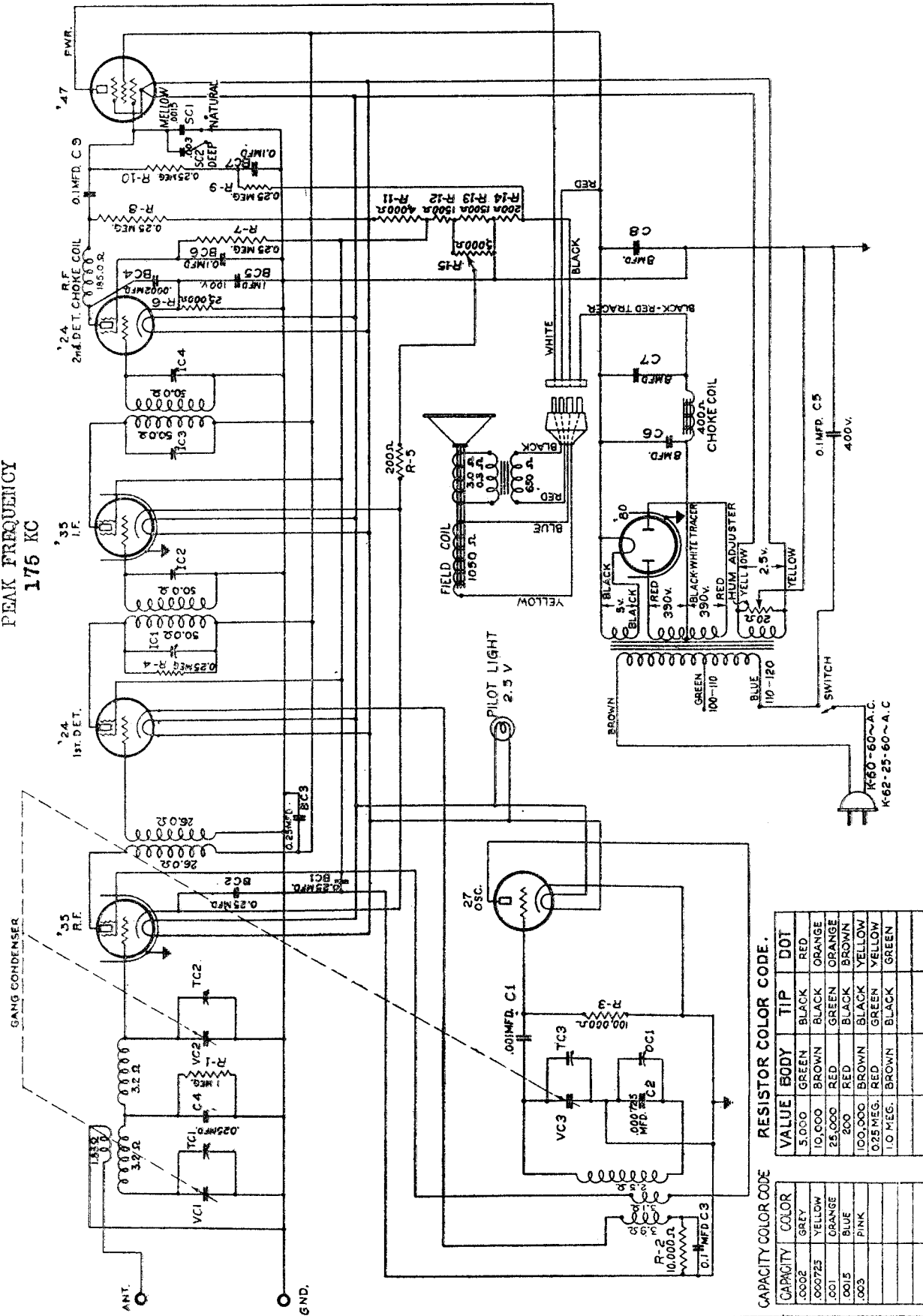
MODEL K-45



MODEL K-60, K-62

KOLSTER RADIO, INC.

PEAK FREQUENCY
175 KC



CAPACITY COLOR CODE

CAPACITY	COLOR
.002	GREY
.0075	YELLOW
.01	ORANGE
.015	BLUE
.03	PINK

RESISTOR COLOR CODE

VALUE	BODY	TIP	DOT
5,000	GREEN	BLACK	RED
10,000	BROWN	BLACK	ORANGE
25,000	RED	BLACK	ORANGE
200	RED	BLACK	BROWN
100,000	BROWN	BLACK	YELLOW
0.25 MEG.	RED	GREEN	YELLOW
1.0 MEG.	BROWN	BLACK	GREEN

Power Consumption 95 Watt

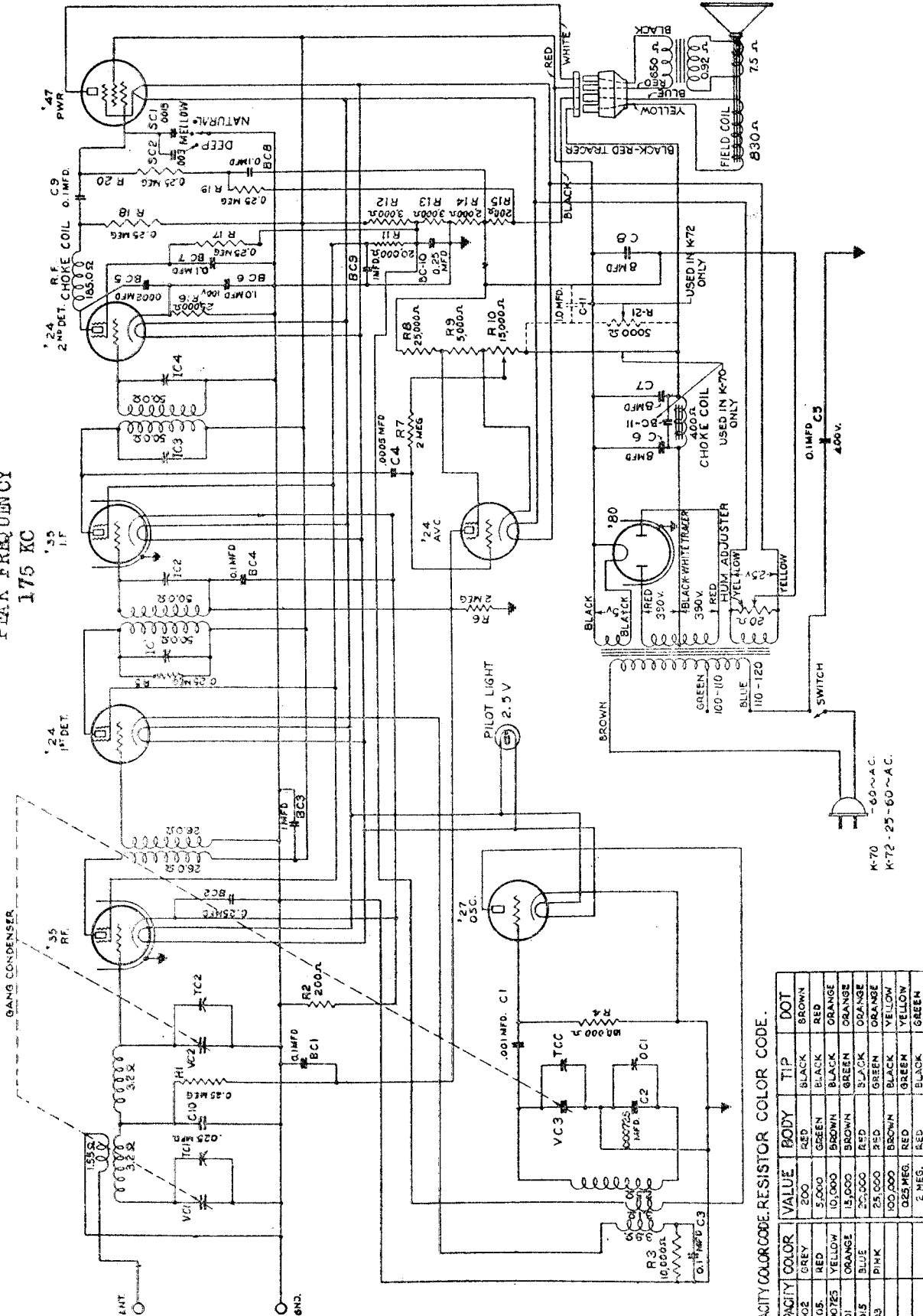
KOLSTER — INTERNATIONAL RADIO MODELS K-60 — K-62 — 1937 —

MODEL K-70, K-72

KOLSTER RADIO, INC.

-1931-

PEAK FREQUENCY
175 KC



CAPACITY COLOR CODE RESISTOR COLOR CODE.

CAPACITY	COLOR	VALUE	BODY	TIP	DOT
.0002	GREY	200	RED	BLACK	BROWN
.0005	RED	5,000	BLACK	BLACK	RED
.000725	YELLOW	10,000	BROWN	BLACK	ORANGE
.001	ORANGE	15,000	BROWN	GREEN	ORANGE
.0015	BLUE	20,000	RED	SLACK	ORANGE
.0025	PINK	25,000	RED	GREEN	ORANGE
.005		100,000	BROWN	BLACK	YELLOW
.025		250,000	RED	GREEN	YELLOW
.5		500,000	RED	BLACK	GREEN

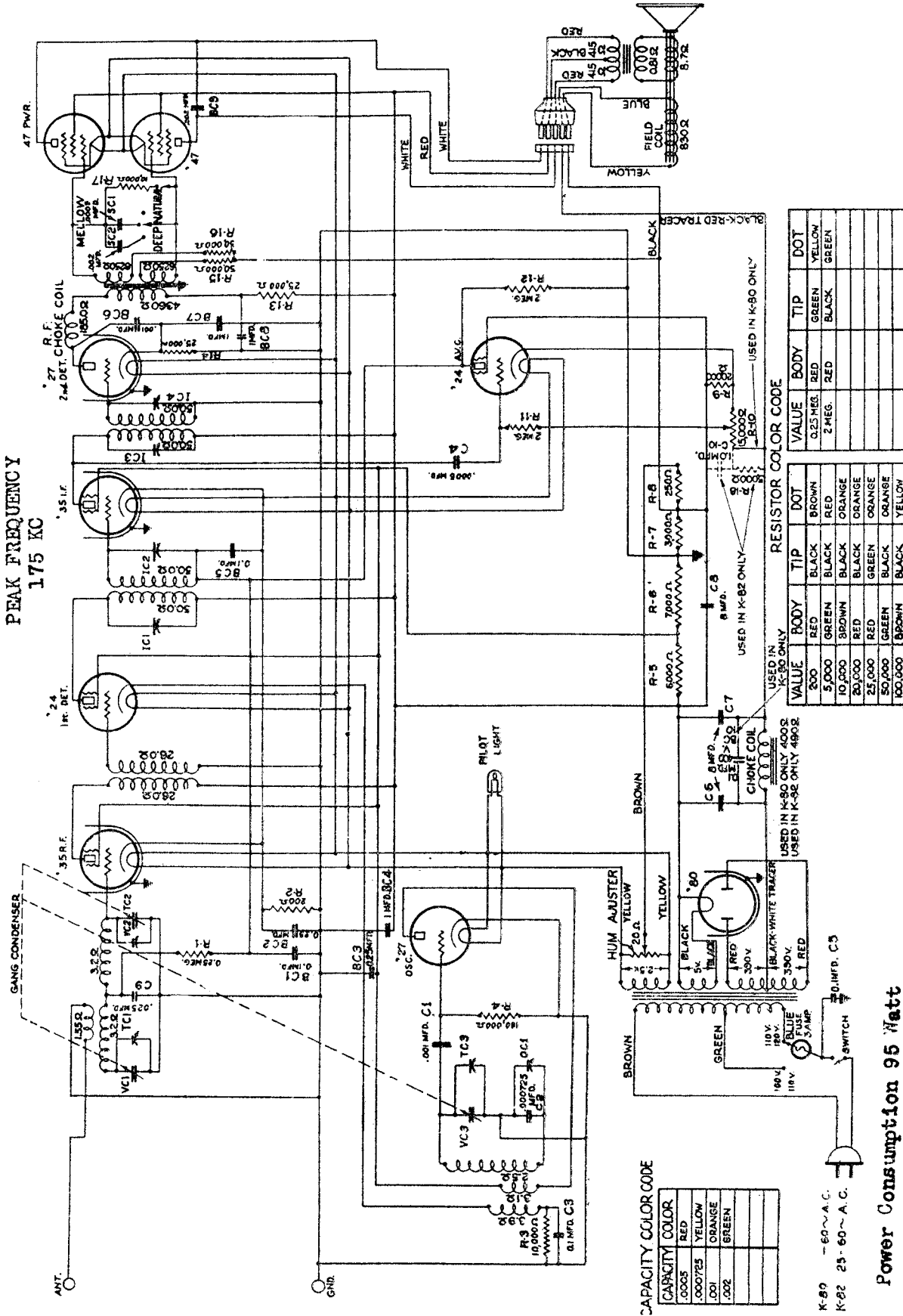
Power Consumption 95 Watt

KOLSTER — INTERNATIONAL RADIO MODELS K-70—K-72

MODEL K-80, K-82

KOLSTER RADIO, INC.

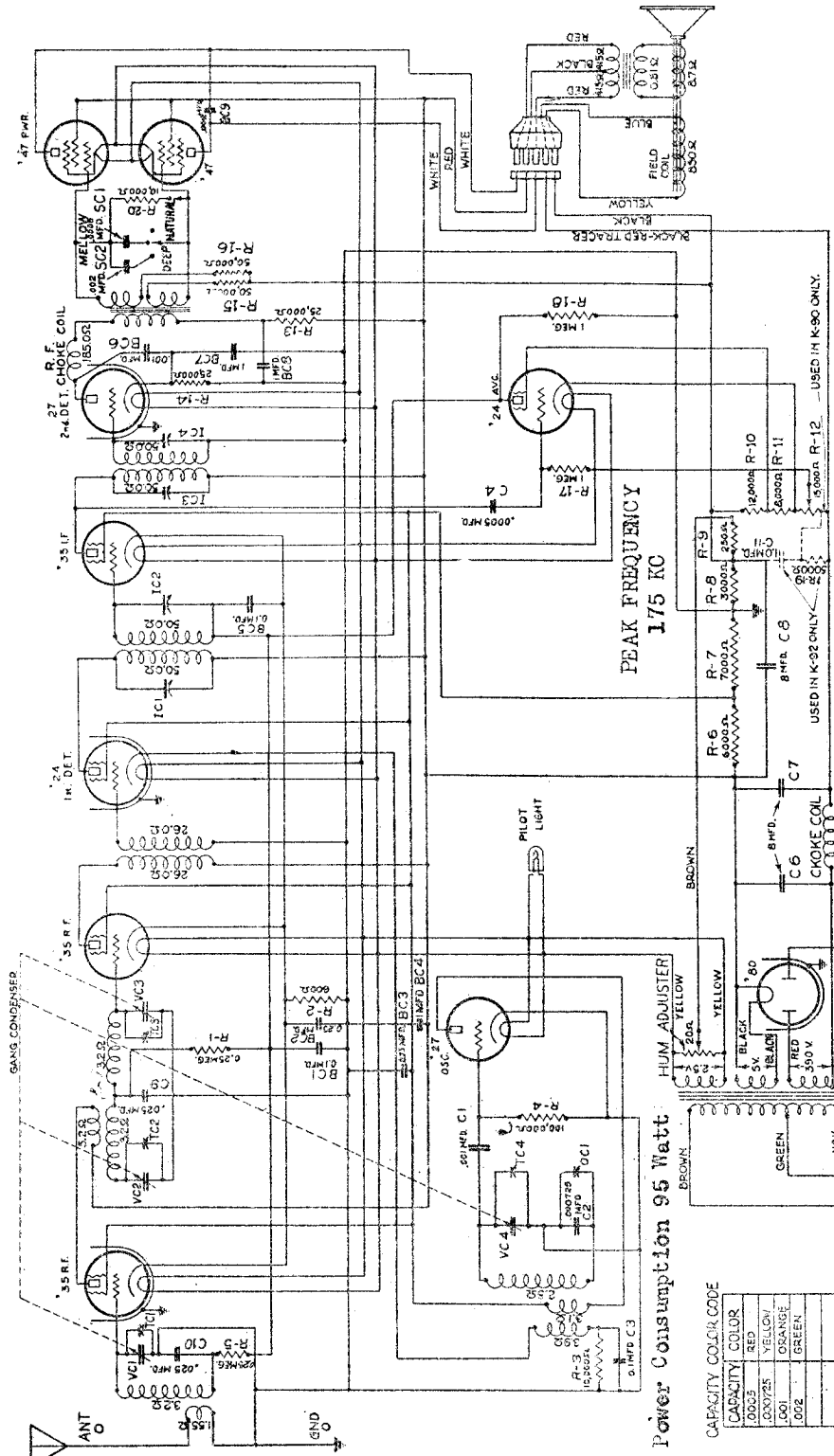
- 1931 -



KOLSTER — INTERNATIONAL RADIO MODELS K-80—K-82

MODEL K-90, K-92
Schematic
Voltage

KOLSTER RADIO, INC.



VOLUME CONTROL AT MAXIMUM. TONE CONTROL AT NATURAL POSITION.

TUBE	CGV	SGV	KV	PV	P.M.A.
RF	-0.2	75	68	176	3
Osc.	0	-	62	73	5.5
1st. Det.	-5.6	72	68	175	.52
IF	-0.4	75	68	177	2.6
2nd. Det.	-15	-	76	145	.65
AVC	-0.5	44	-58	67	0
Pwr.	-12	250	-	228	28
Rect.	-	-	-	-	47

Power Consumption 95 Watt

CAPACITY COLOR CODE

CAPACITY	COLOR
0005	RED
00025	YELLOW
001	ORANGE
002	GREEN

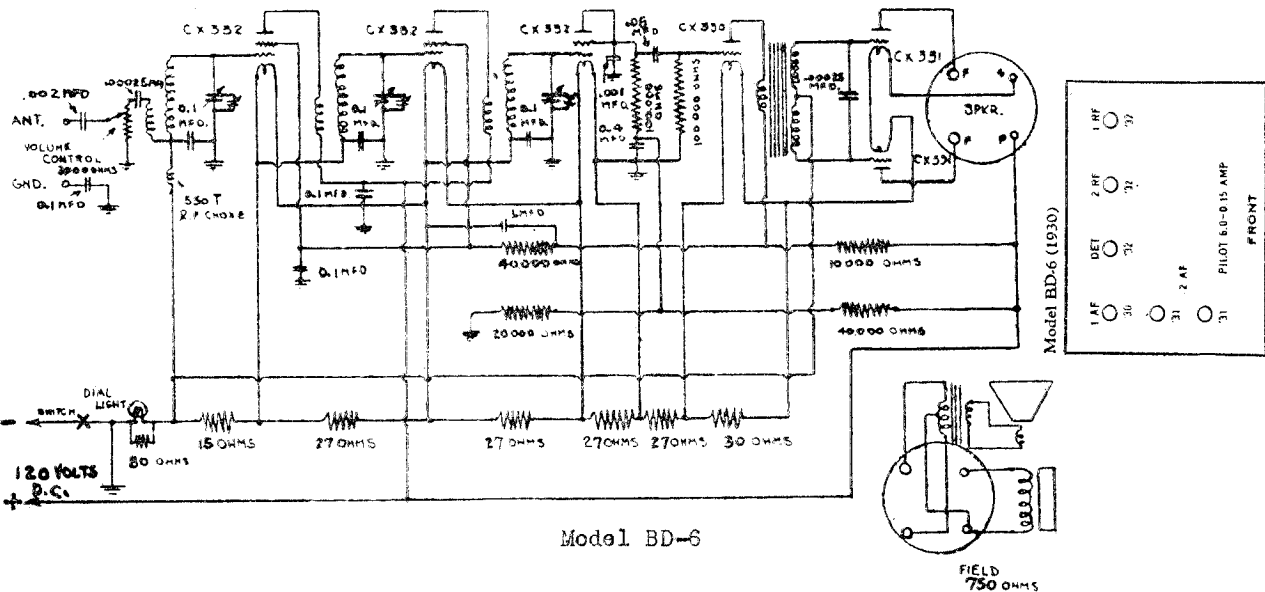
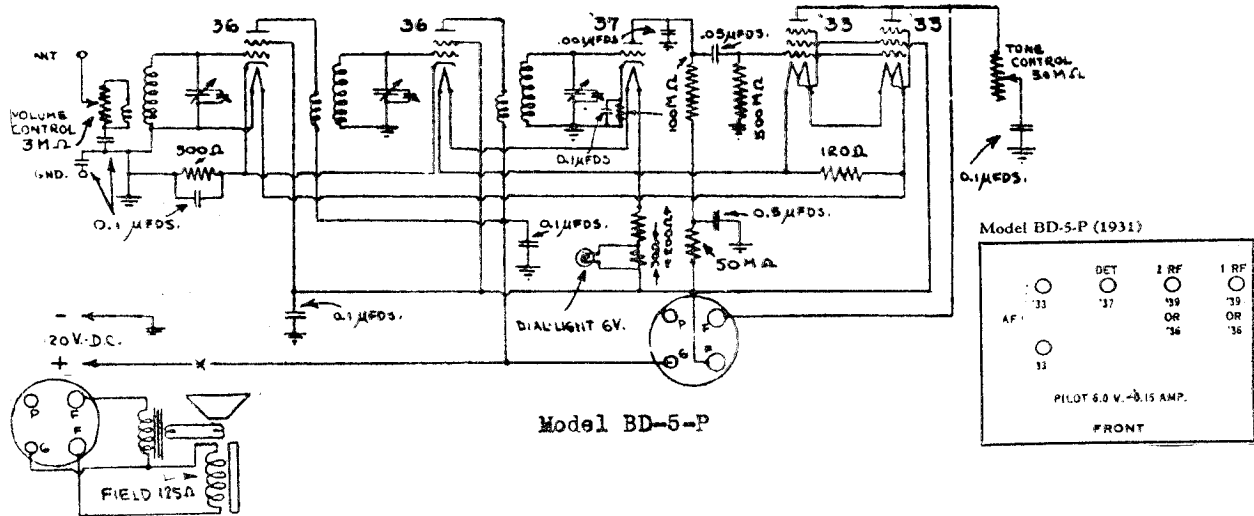
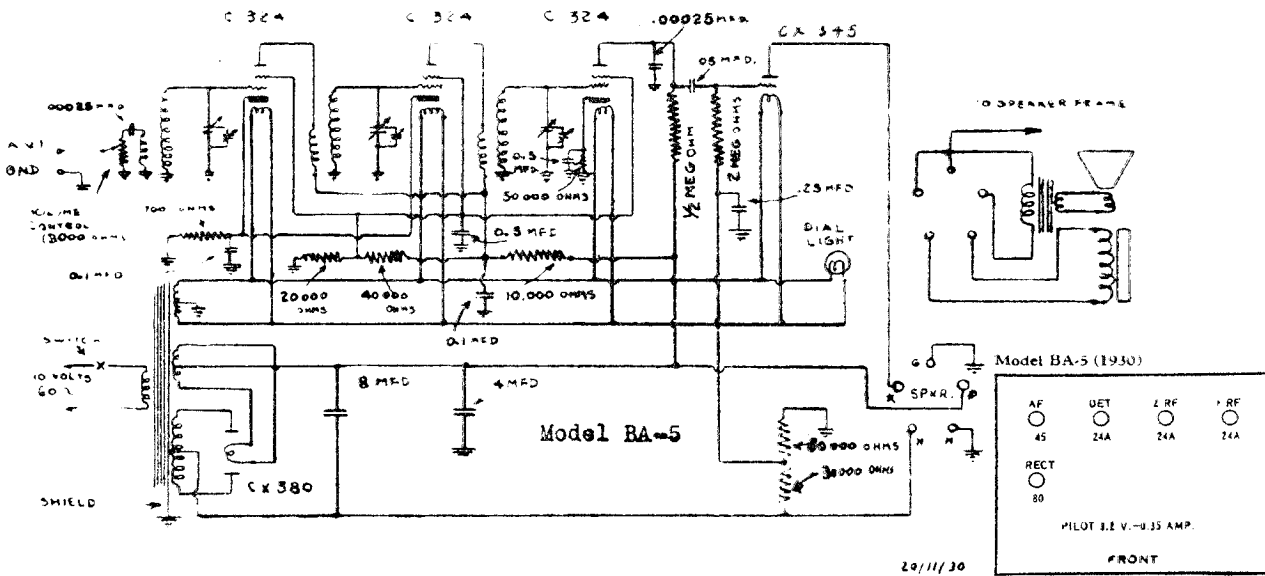
K-90 - 60 ~ A.C.
K-92-25 - 60 ~ A.C.

RESISTOR COLOR CODE

VALUE	BODY	TIP	DOT
0.001	BLACK	BROWN	BROWN
0.002	BLACK	BROWN	RED
0.005	BLACK	BROWN	ORANGE
0.01	BLACK	BROWN	RED
0.02	BLACK	BROWN	ORANGE
0.05	BLACK	BROWN	RED
0.1	BLACK	BROWN	ORANGE
0.2	BLACK	BROWN	RED
0.5	BLACK	BROWN	ORANGE
1	BLACK	BROWN	RED
2	BLACK	BROWN	ORANGE
5	BLACK	BROWN	RED
10	BLACK	BROWN	ORANGE
20	BLACK	BROWN	RED
50	BLACK	BROWN	ORANGE
100	BLACK	BROWN	RED
200	BLACK	BROWN	ORANGE
500	BLACK	BROWN	RED
1000	BLACK	BROWN	ORANGE
2000	BLACK	BROWN	RED
5000	BLACK	BROWN	ORANGE
10000	BLACK	BROWN	RED
20000	BLACK	BROWN	ORANGE
50000	BLACK	BROWN	RED
100000	BLACK	BROWN	ORANGE
200000	BLACK	BROWN	RED
500000	BLACK	BROWN	ORANGE
1000000	BLACK	BROWN	RED

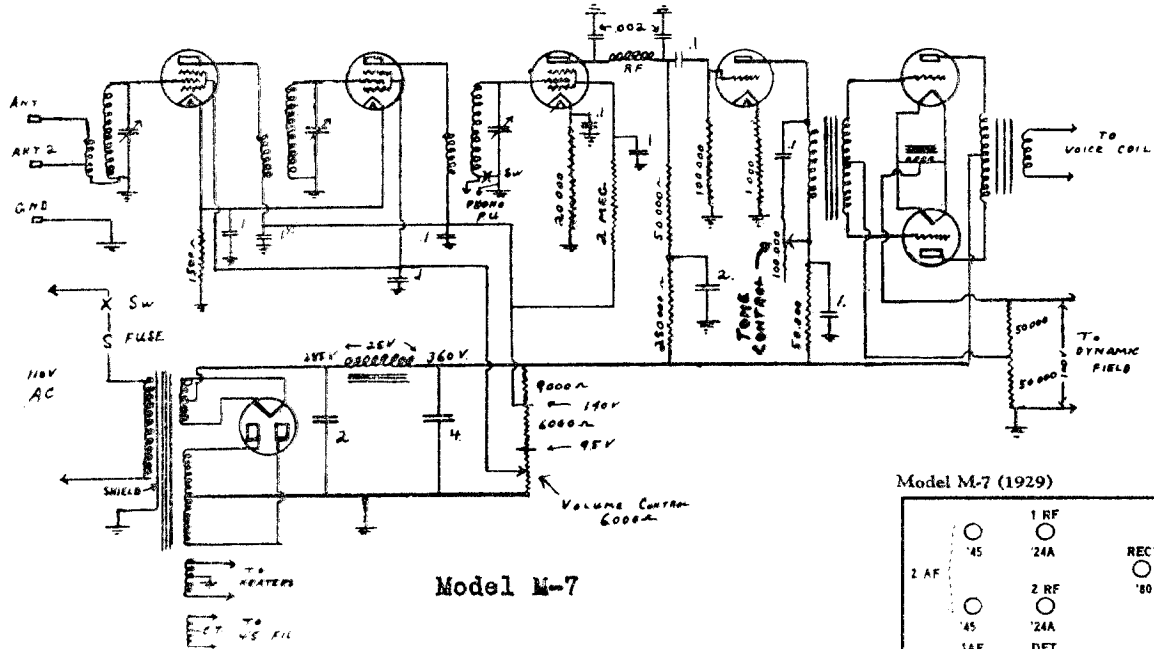
LANG RADIO CC

MODEL BA-5
 MODEL BD-5-P
 MODEL BD-6



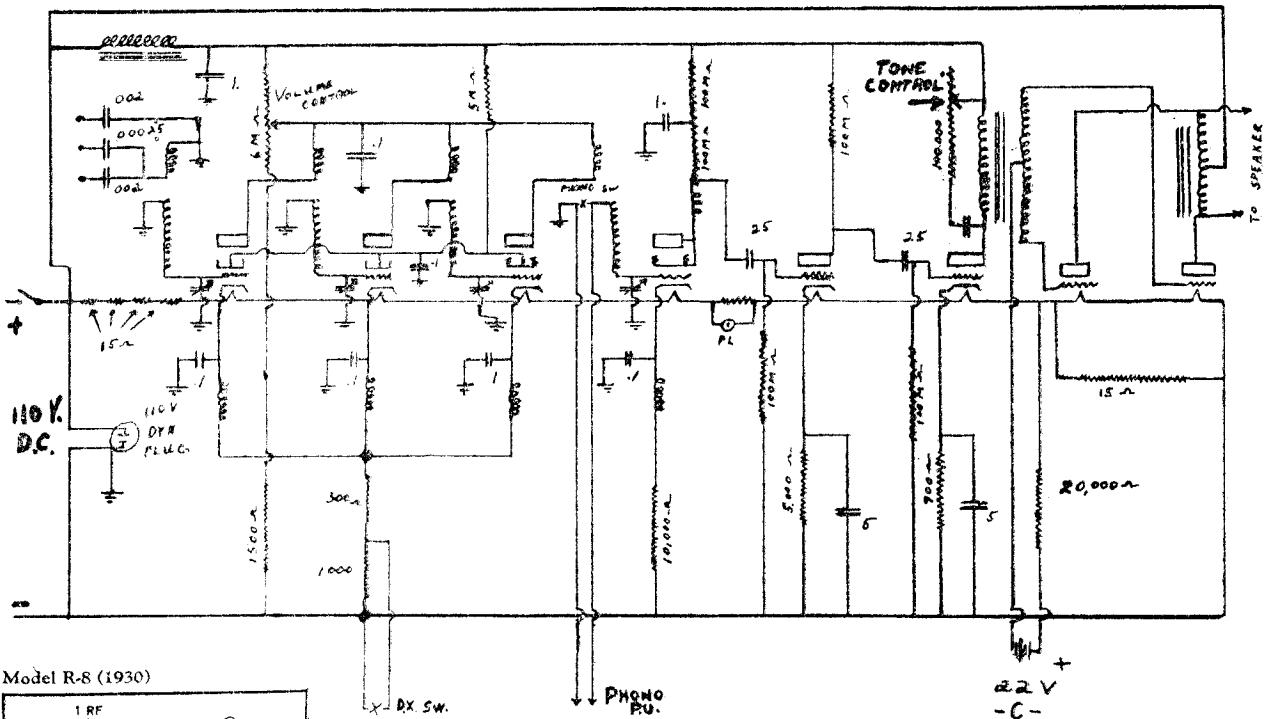
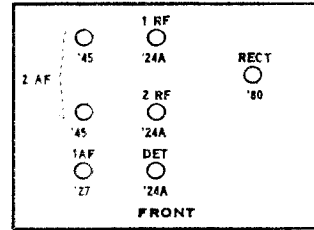
LANG RADIO CO.

MODEL M-7
MODEL R-8

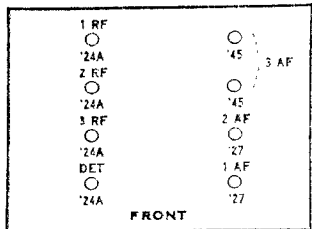


Model M-7

Model M-7 (1929)



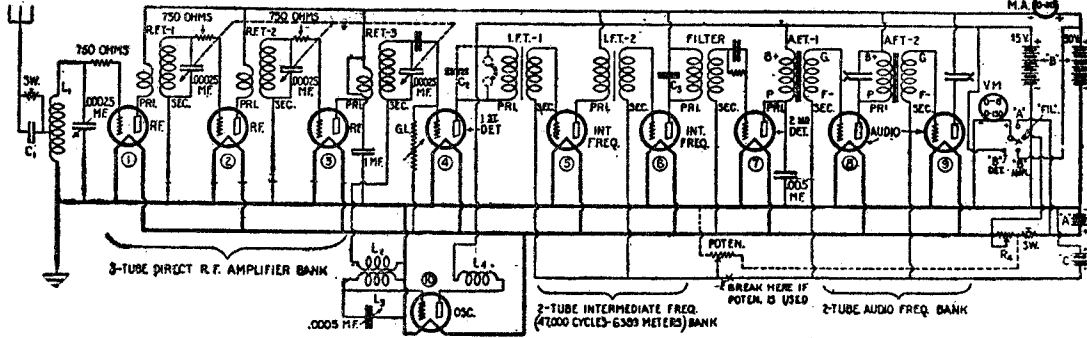
Model R-8 (1930)



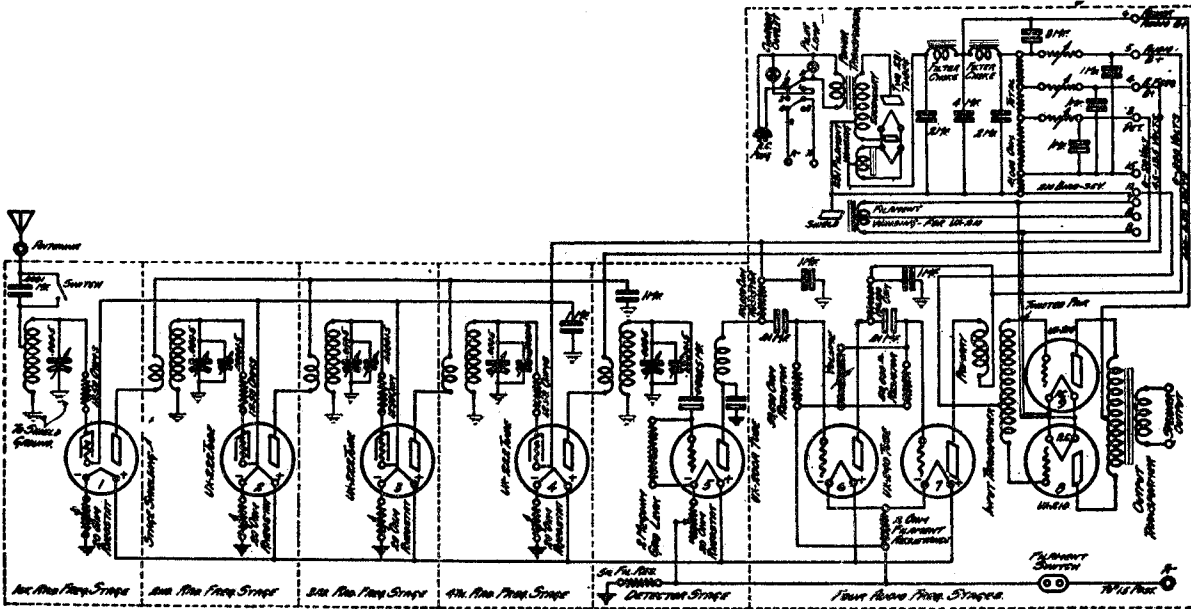
Model R-8

C. R. LEUTZ, INC.

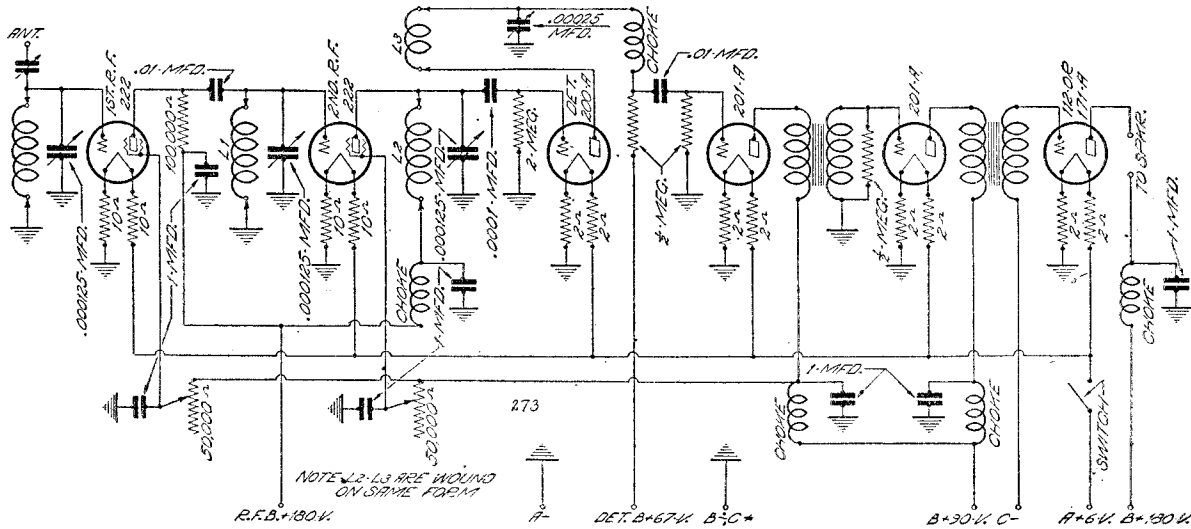
MODEL C-10
MODEL Silver-Ghost
MODEL C



The Experimenters' Information Service Navy Model C-10 super-heterodyne designed for a wave-length range from 600 meters down to 50 meters, the band being covered through the use of interchangeable coils.

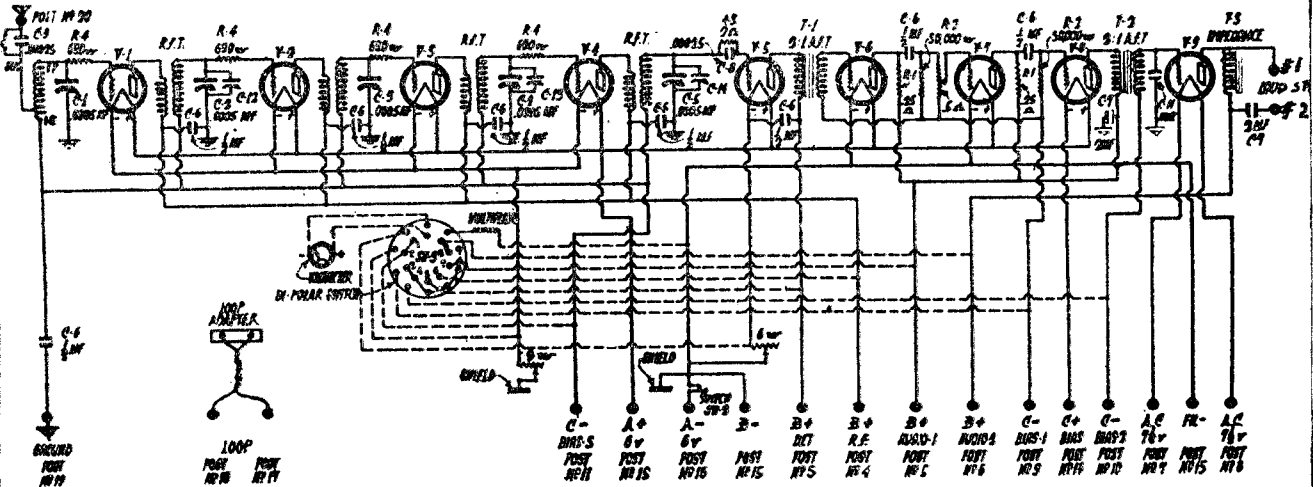


Circuit Diagram of New "Silver Ghost" Receiver

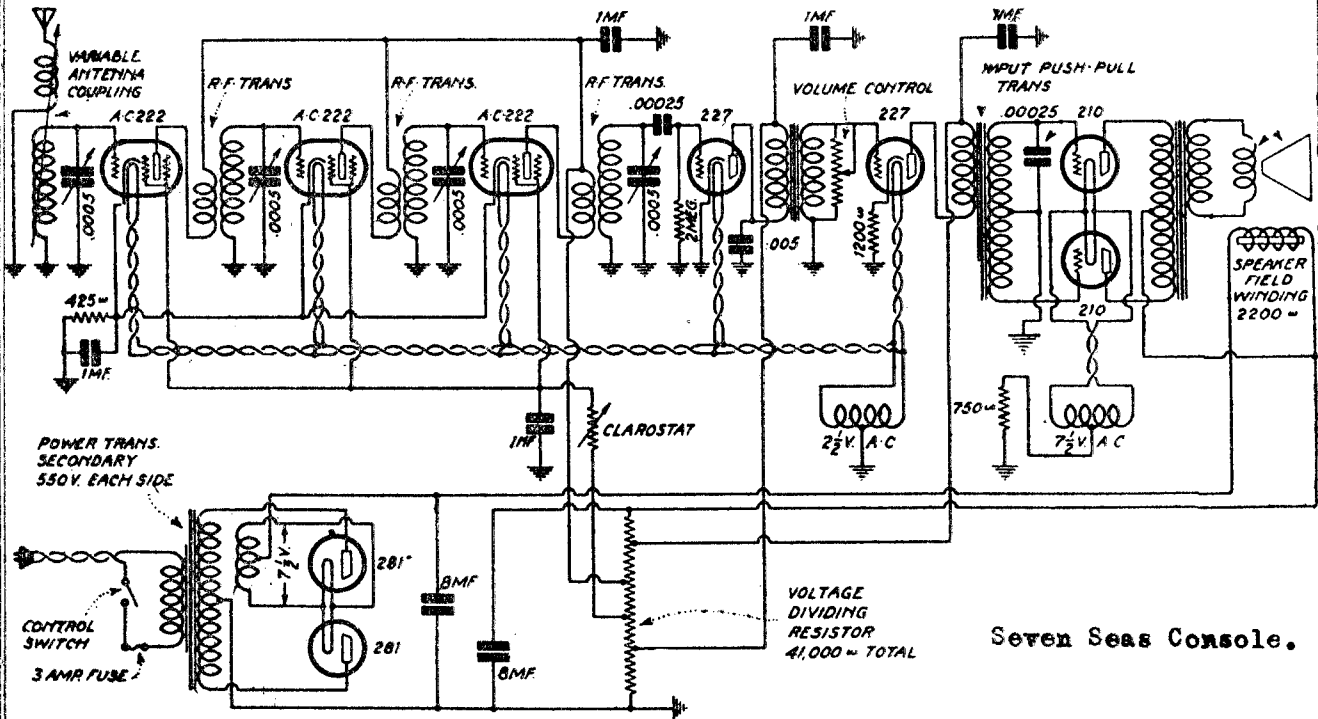


MODEL Trans-Oceanic
MODEL Seven Seas

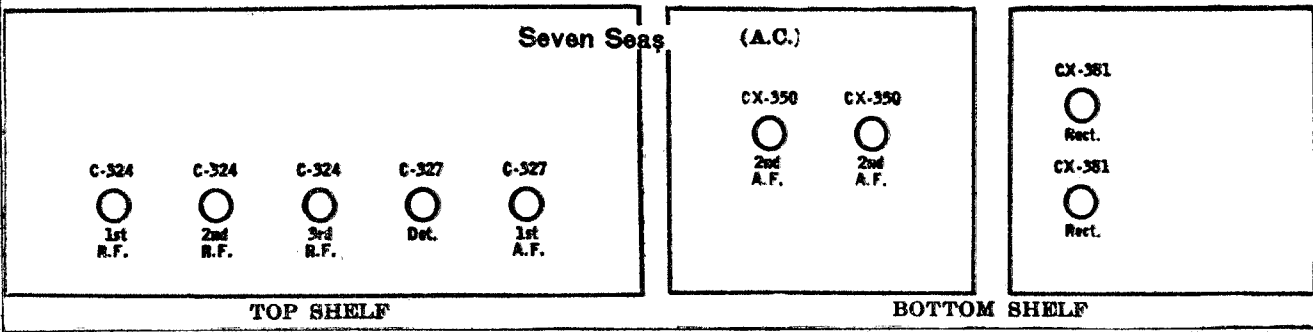
C. R. LEUTZ, INC.



Universal Trans-Oceanic Receiver.

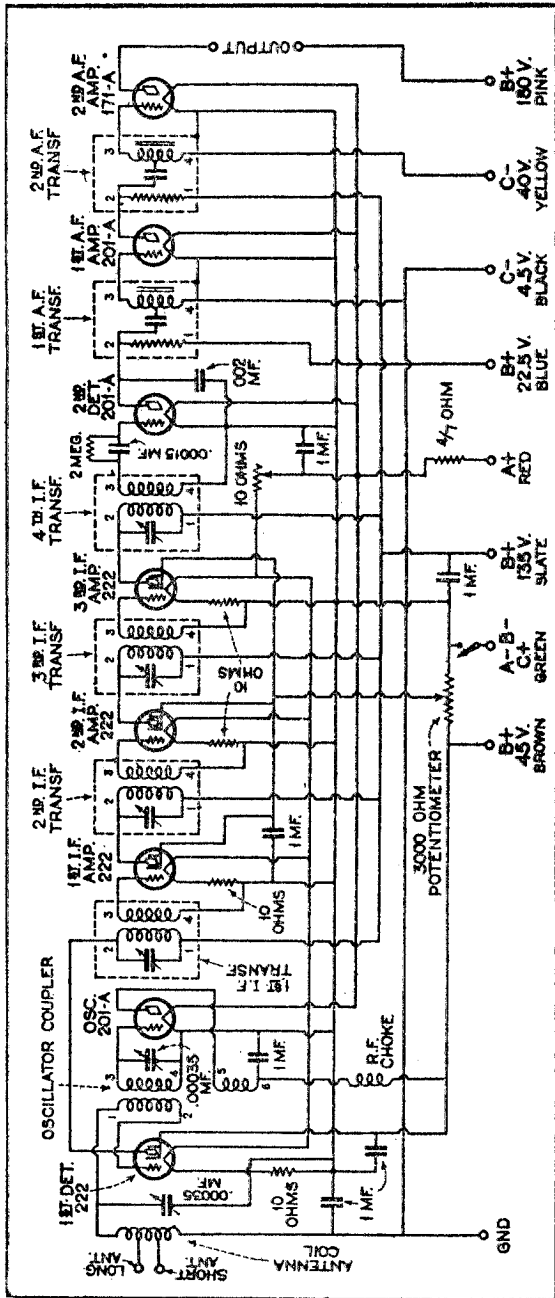


Seven Seas Console.

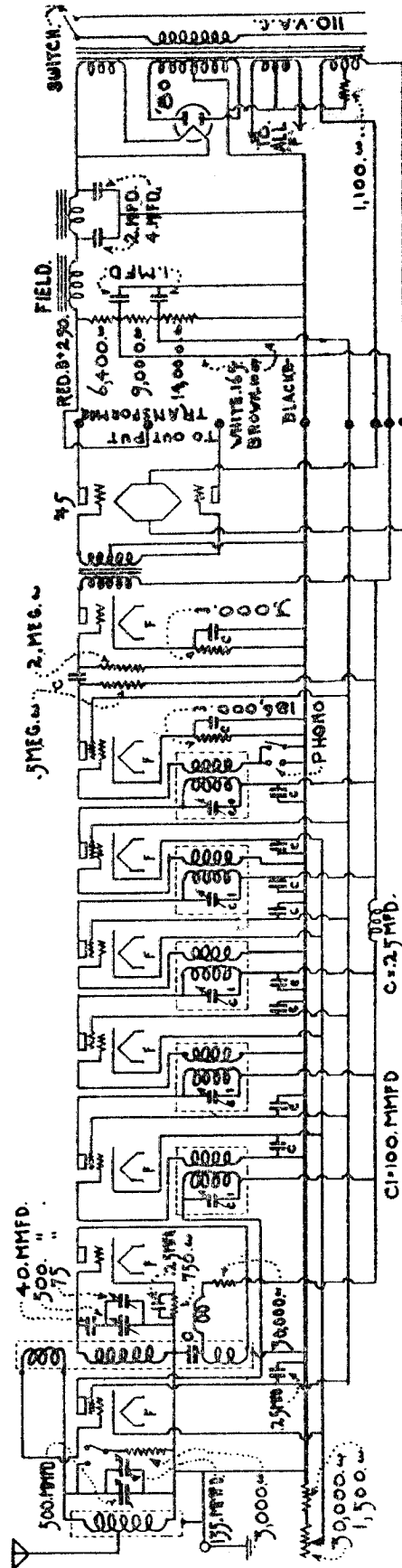


LINCOLN RADIO CORP.

MODEL 8-80
MODEL 31



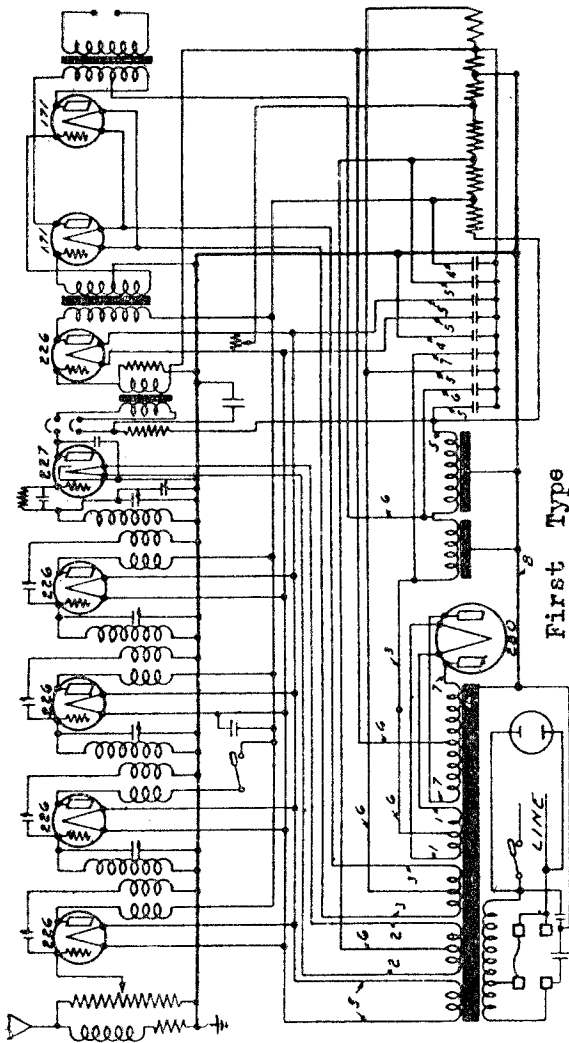
Model 8-80



Model 31

McMILLAN RADIO CO.

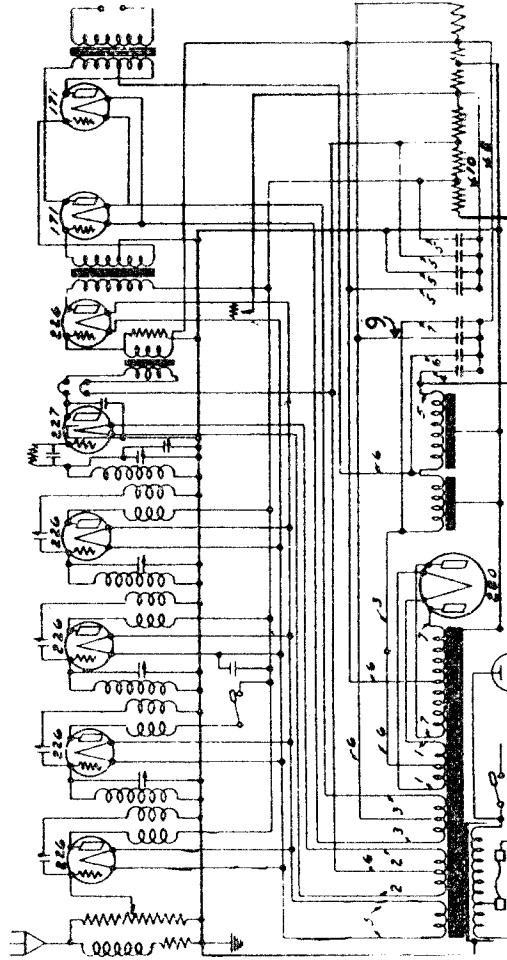
MODEL #8ⁿ
Two Types



First Type

McMILLAN 8-A. C. POWER SET

Use this circuit diagram for all receivers equipped with a sealed power transformer block, or condenser block not having any brown or slate colored leads.

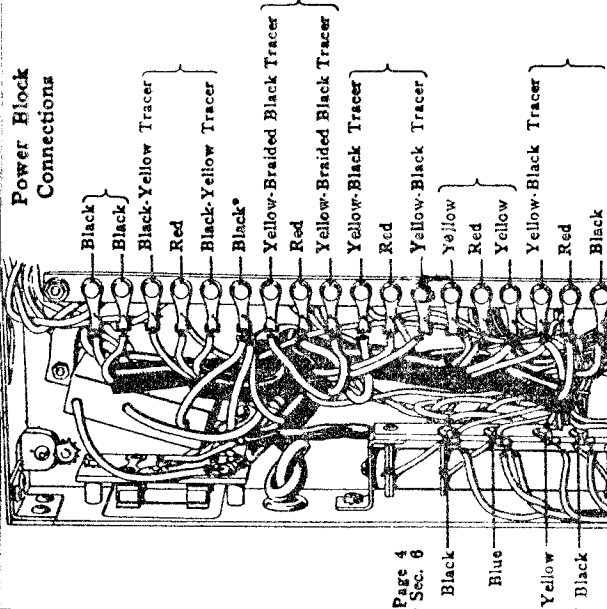


Second Type

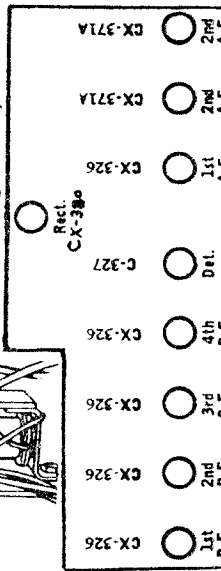
Note—Use this circuit diagram for receiver equipped with power blocks having removable covers or condenser blocks having one brown and one slate colored lead

- 1-YELLOW WITH BLACK TRACER
- 2-BLACK WITH YELLOW TRACER
- 3-BLACK & YELLOW
- 4-BLUE
- 5-BLACK
- 6-RED
- 7-YELLOW
- 8-GREEN
- 9-SLATE
- 10-BROWN

Power Block Connections



Note—Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.

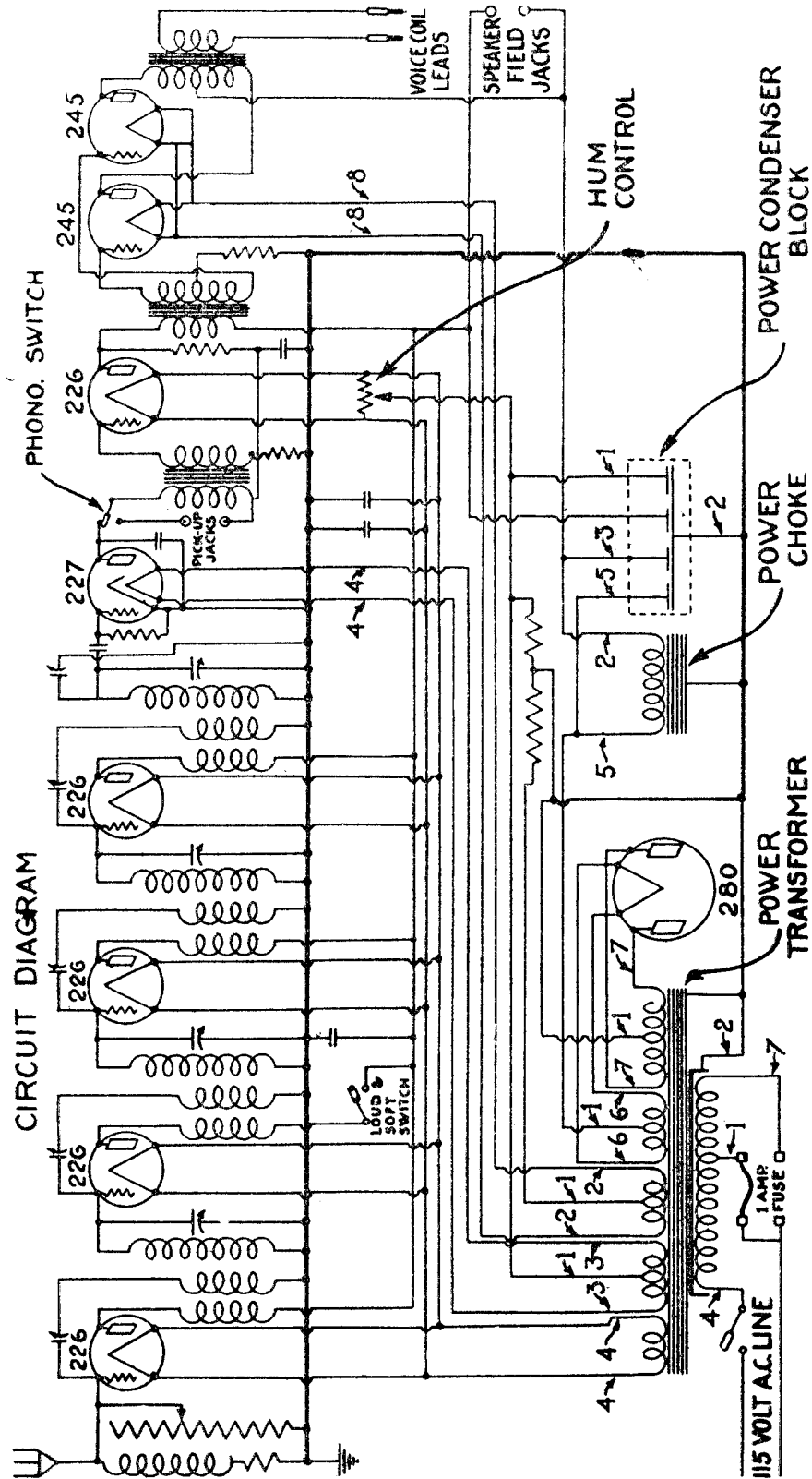


Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

TUBE NO. IN CHASSIS	TYPE OF TUBE	PLATE VOLTAGE	SCREEN VOLTAGE	GRID VOLTAGE	BIAS VOLTAGE	REAR PIN IN SOCKET OF SET
226	1st R.F.	1.50	1.5	1.5	1.5	PLATE
226	2nd R.F.	1.50	1.5	1.5	1.5	SCREEN
226	3rd R.F.	1.50	1.5	1.5	1.5	GRID
226	4th R.F.	1.50	1.5	1.5	1.5	BIAS
227	Detector	2.40	1.5	2.2	2.6	PLATE
228	1st A.F.	3.93	1.7	3.5	1.00	SCREEN
229	2nd A.F.	3.93	1.7	3.5	1.00	GRID
230	3rd A.F.	3.93	1.7	3.5	1.00	BIAS
231	4th A.F.	3.93	1.7	3.5	1.00	PLATE
232	5th A.F.	3.93	1.7	3.5	1.00	SCREEN
233	6th A.F.	3.93	1.7	3.5	1.00	GRID
234	7th A.F.	3.93	1.7	3.5	1.00	BIAS
235	8th A.F.	3.93	1.7	3.5	1.00	PLATE
236	9th A.F.	3.93	1.7	3.5	1.00	SCREEN
237	10th A.F.	3.93	1.7	3.5	1.00	GRID
238	11th A.F.	3.93	1.7	3.5	1.00	BIAS
239	12th A.F.	3.93	1.7	3.5	1.00	PLATE
240	13th A.F.	3.93	1.7	3.5	1.00	SCREEN
241	14th A.F.	3.93	1.7	3.5	1.00	GRID
242	15th A.F.	3.93	1.7	3.5	1.00	BIAS
243	16th A.F.	3.93	1.7	3.5	1.00	PLATE
244	17th A.F.	3.93	1.7	3.5	1.00	SCREEN
245	18th A.F.	3.93	1.7	3.5	1.00	GRID
246	19th A.F.	3.93	1.7	3.5	1.00	BIAS
247	20th A.F.	3.93	1.7	3.5	1.00	PLATE
248	21st A.F.	3.93	1.7	3.5	1.00	SCREEN
249	22nd A.F.	3.93	1.7	3.5	1.00	GRID
250	23rd A.F.	3.93	1.7	3.5	1.00	BIAS
251	24th A.F.	3.93	1.7	3.5	1.00	PLATE
252	25th A.F.	3.93	1.7	3.5	1.00	SCREEN
253	26th A.F.	3.93	1.7	3.5	1.00	GRID
254	27th A.F.	3.93	1.7	3.5	1.00	BIAS
255	28th A.F.	3.93	1.7	3.5	1.00	PLATE
256	29th A.F.	3.93	1.7	3.5	1.00	SCREEN
257	30th A.F.	3.93	1.7	3.5	1.00	GRID
258	31st A.F.	3.93	1.7	3.5	1.00	BIAS
259	32nd A.F.	3.93	1.7	3.5	1.00	PLATE
260	33rd A.F.	3.93	1.7	3.5	1.00	SCREEN
261	34th A.F.	3.93	1.7	3.5	1.00	GRID
262	35th A.F.	3.93	1.7	3.5	1.00	BIAS
263	36th A.F.	3.93	1.7	3.5	1.00	PLATE
264	37th A.F.	3.93	1.7	3.5	1.00	SCREEN
265	38th A.F.	3.93	1.7	3.5	1.00	GRID
266	39th A.F.	3.93	1.7	3.5	1.00	BIAS
267	40th A.F.	3.93	1.7	3.5	1.00	PLATE
268	41st A.F.	3.93	1.7	3.5	1.00	SCREEN
269	42nd A.F.	3.93	1.7	3.5	1.00	GRID
270	43rd A.F.	3.93	1.7	3.5	1.00	BIAS
271	44th A.F.	3.93	1.7	3.5	1.00	PLATE
272	45th A.F.	3.93	1.7	3.5	1.00	SCREEN
273	46th A.F.	3.93	1.7	3.5	1.00	GRID
274	47th A.F.	3.93	1.7	3.5	1.00	BIAS
275	48th A.F.	3.93	1.7	3.5	1.00	PLATE
276	49th A.F.	3.93	1.7	3.5	1.00	SCREEN
277	50th A.F.	3.93	1.7	3.5	1.00	GRID
278	51st A.F.	3.93	1.7	3.5	1.00	BIAS
279	52nd A.F.	3.93	1.7	3.5	1.00	PLATE
280	53rd A.F.	3.93	1.7	3.5	1.00	SCREEN
281	54th A.F.	3.93	1.7	3.5	1.00	GRID
282	55th A.F.	3.93	1.7	3.5	1.00	BIAS
283	56th A.F.	3.93	1.7	3.5	1.00	PLATE
284	57th A.F.	3.93	1.7	3.5	1.00	SCREEN
285	58th A.F.	3.93	1.7	3.5	1.00	GRID
286	59th A.F.	3.93	1.7	3.5	1.00	BIAS
287	60th A.F.	3.93	1.7	3.5	1.00	PLATE
288	61st A.F.	3.93	1.7	3.5	1.00	SCREEN
289	62nd A.F.	3.93	1.7	3.5	1.00	GRID
290	63rd A.F.	3.93	1.7	3.5	1.00	BIAS
291	64th A.F.	3.93	1.7	3.5	1.00	PLATE
292	65th A.F.	3.93	1.7	3.5	1.00	SCREEN
293	66th A.F.	3.93	1.7	3.5	1.00	GRID
294	67th A.F.	3.93	1.7	3.5	1.00	BIAS
295	68th A.F.	3.93	1.7	3.5	1.00	PLATE
296	69th A.F.	3.93	1.7	3.5	1.00	SCREEN
297	70th A.F.	3.93	1.7	3.5	1.00	GRID
298	71st A.F.	3.93	1.7	3.5	1.00	BIAS
299	72nd A.F.	3.93	1.7	3.5	1.00	PLATE
300	73rd A.F.	3.93	1.7	3.5	1.00	SCREEN

MODEL Series 900

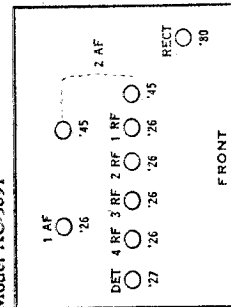
McMILLAN RADIO CO.



Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage Reading on Audio tubes is low due to the current draw of the set and high resistances in the set.

- 1—RED
- 2—GREEN
- 3—BLUE
- 4—BLACK
- 5—YELLOW
- 6—BROWN
- 7—WHITE

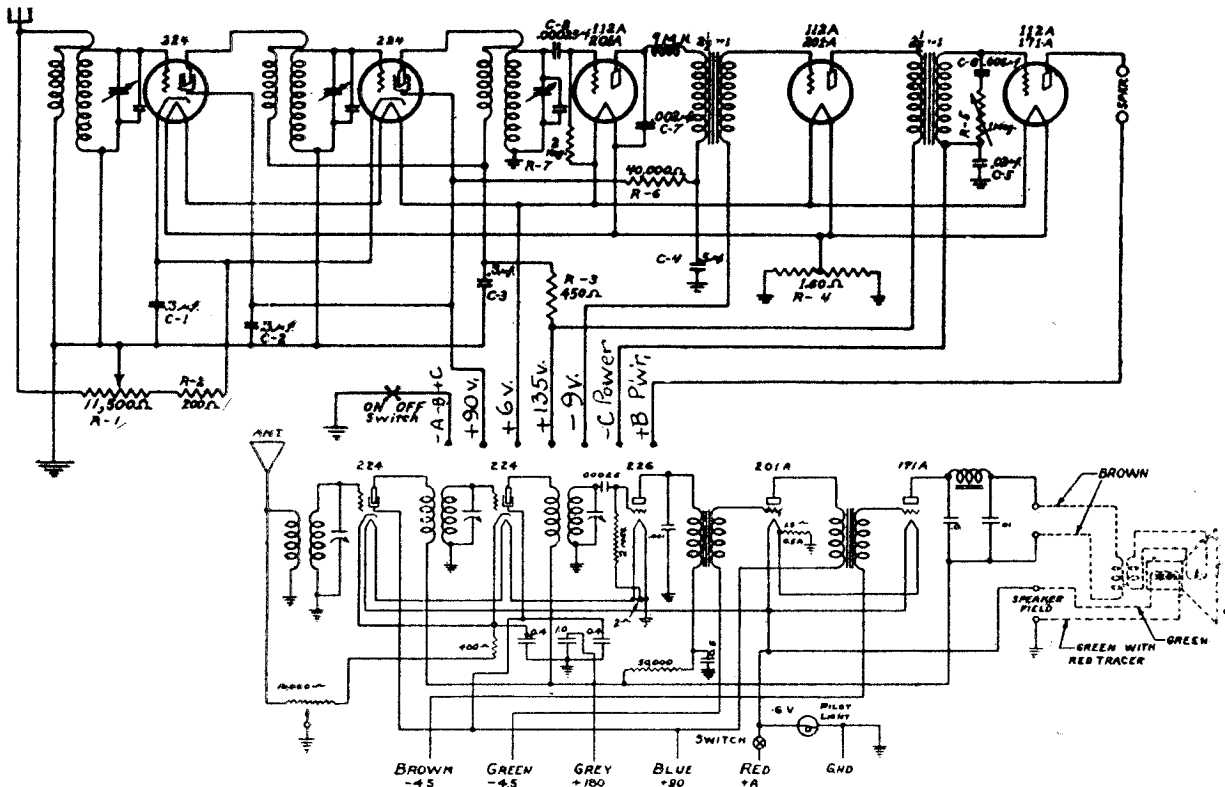
Model AC-5091



TUBE NO.	TYPE	POSITION OF TUBE IN SET	TUBE OUT		TUBE IN TESTER		PLATE	PLATE	SCREEN	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS				RESISTANCE	RESISTANCE
225	1B5	1B5	1.5	1.4	1.4	1.2	10	5	9	4
226	2nd 6X4	1.5	1.5	1.4	1.4	1.2	10	5	9	4
226	3rd 6X4	1.5	1.5	1.4	1.4	1.2	10	5	9	4
226	4th 6X4	1.5	1.5	1.4	1.4	1.2	10	5	9	4
227	6B7	2.5	2.5	1.2	2.3	30	0	10	2	0
285	1B1 AF	1.5	1.27	1.4	1.17	6.5	—	4.5	6.5	5
245	PP	2.4	2.6	2.4	2.4	11.5	—	25	29	4.5
245	PP	2.6	2.6	2.4	2.4	11.5	—	25	29	4.5
280	Rect.	5.8	5.8	—	—	—	—	—	—	90

MONTGOMERY-WARD & CO.

MODELS 62-055, 49, 1522, 1922
 MODELS 1522, 1562
 Voltage, Schematic
 Chassis, Bottom View



General Description

Not many of these chassis were put out. Because of the high "A" battery consumption, certain changes were suggested that could be made to reduce "A" battery consumption.

Diagram No. 1 gives the original circuit and it will be seen that the tube circuit consists of—

2—224's, 1—226; 1—201A, and 1—171A.

Diagram No. 2 shows the changes to be made so the set will consume less "A" battery current. The tubes are now:

2—NY 64's, or 236's; 2—201A; and 1—112A

The NY 64 tubes are screen-grid battery operated tubes which were designed for use in automobile radio sets. Their current consumption is small, their amplification factor quite high and they are rugged and very long lived.

The "A" and "B" batteries are not changed to convert the receiver for lower "A" battery consumption.

Make the changes shown on the diagram. Connect the storage battery to black (neg.) and red (pos.) leads. Insert two NY 64 tubes in sockets marked 224. Place a 201A in socket marked 226, and one 201A in socket marked 201A. Use a 112A in socket marked 171A. Turn on filament switch and see if tubes light—if so connect "B" batteries as tagged, except "B + 180" lead—connect this to "B + 135" terminal.

Connect two 4½ Volt "C" batteries in series. The "C — 4½" Volt lead goes to the connection between the 4½ Volt "C" batteries. The "C — 45" goes to the 4½ Volt part of the second battery.

It is recommended that these changes not be made on sets where the customer is entirely satisfied with the operation and the life of the "A" battery. The operation with the 224 tubes is very highly satisfactory. The sensitivity is extremely high, and the tone quality very good.

NOTE - Small dotted lines show original placing and hookup of parts

Fig. 2

DIAGRAM SHOWING CHANGES TO BE MADE IN AIRLINE RADIO CIRCUIT

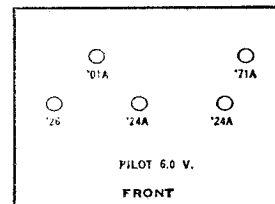
Break connection from I to E
 Break connection at A
 Connect B + C
 Connect D + E
 Connect F + G

Connect resistor from X to J instead of from X to M as originally

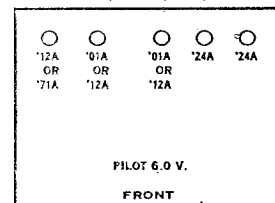
Connect that part of resistor N, marked H + C, to connections I + E, leaving end connection, L, open

Bottom View of Chassis

Models 62-055, 49, 1522, 1922 (1930)

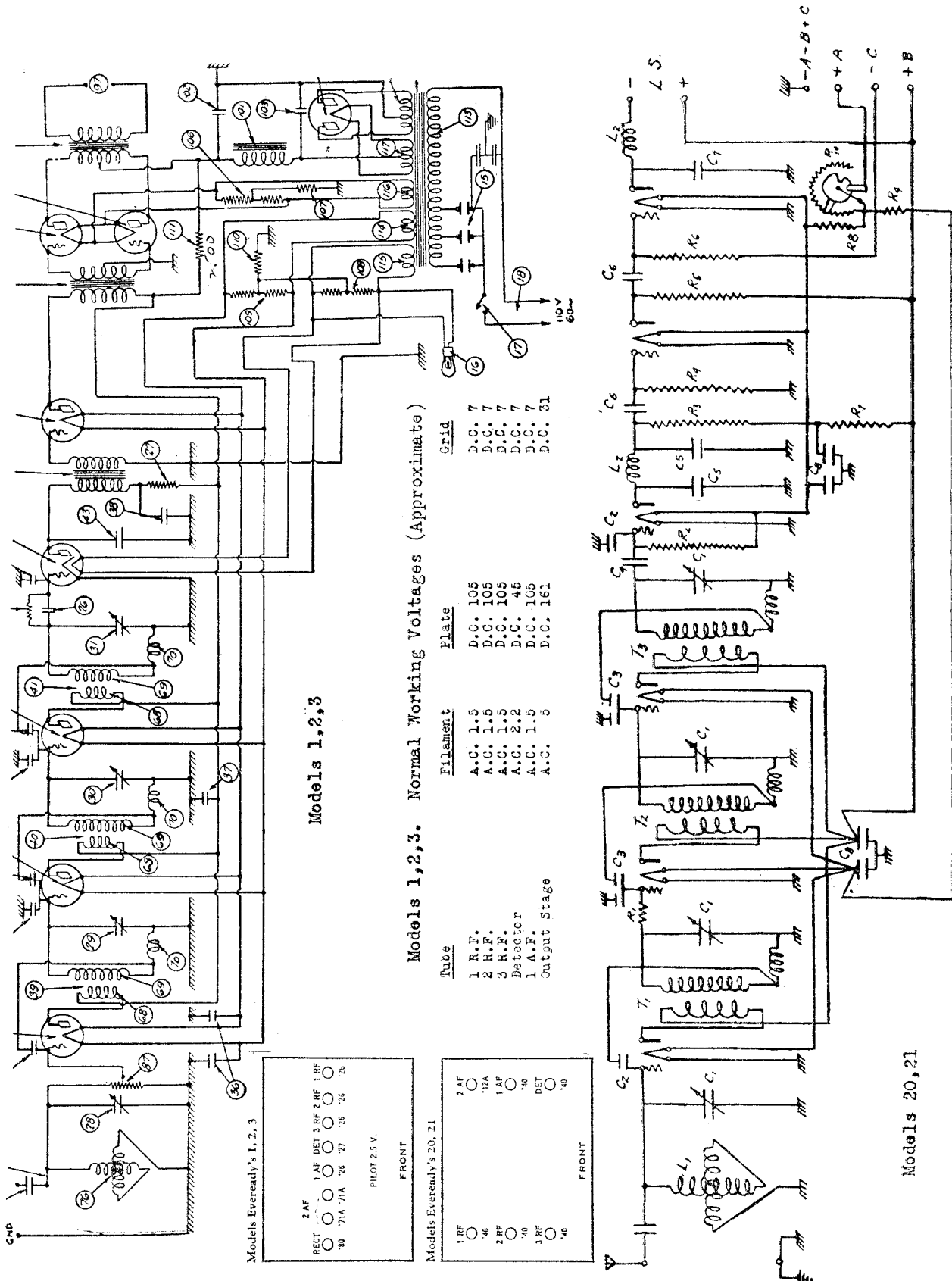


Models 1522, 1562 (1930)



NATIONAL CARBON CO.

MODEL 1,2,3
MODEL 20,21

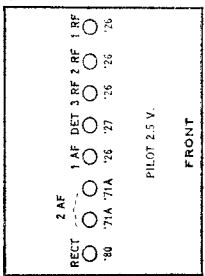


Models 1,2,3

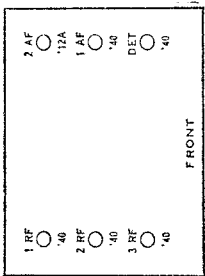
Models 1,2,3. Normal Working Voltages (Approximate)

Tube	Filament	Plate	Grid
1 R.F.	A.C. 1.5	D.C. 105	D.C. 7
2 R.F.	A.C. 1.5	D.C. 105	D.C. 7
3 R.F.	A.C. 1.5	D.C. 105	D.C. 7
Detector	A.C. 2.2	D.C. 45	D.C. 7
1 A.F.	A.C. 1.5	D.C. 105	D.C. 7
Output Stage	A.C. 5	D.C. 161	D.C. 31

Models Eveready's 1, 2, 3



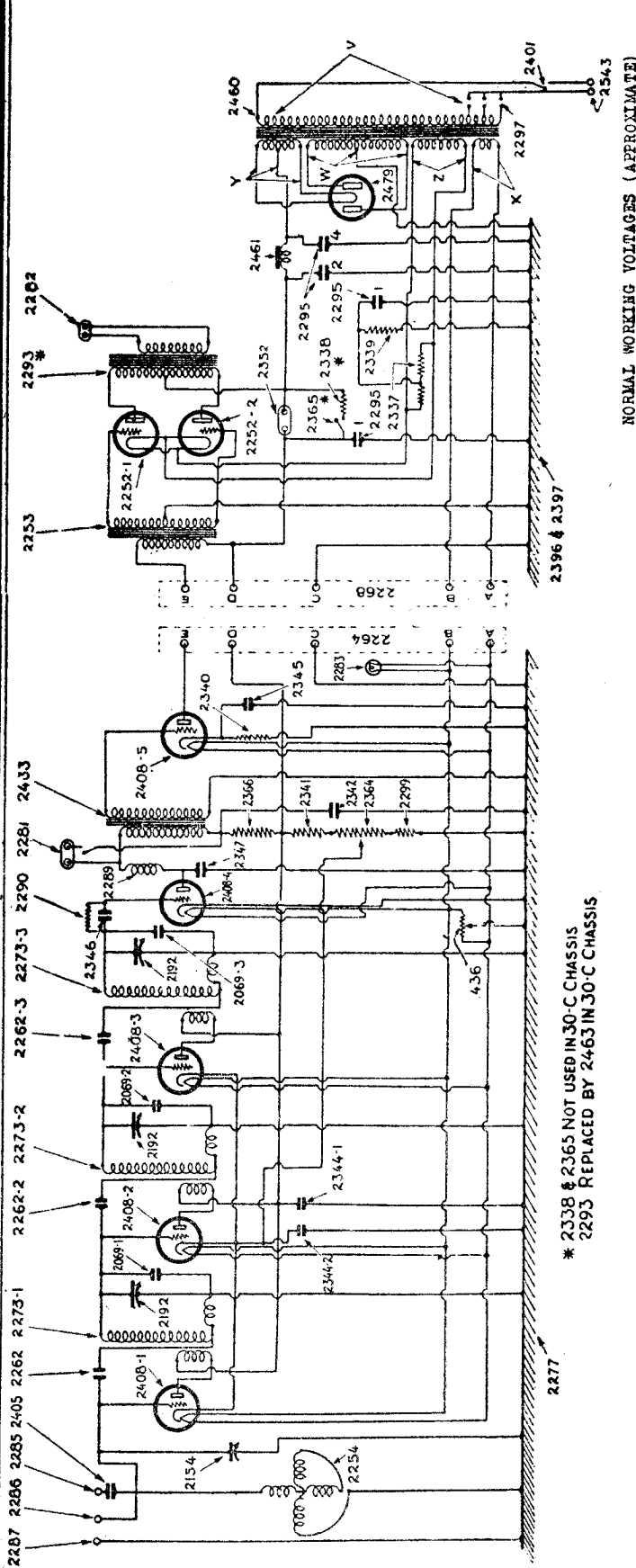
Models Eveready's 20, 21



Models 20,21

MODEL 31, 32, 33, 34
Eveready

NATIONAL CARBON CO.



NORMAL WORKING VOLTAGES (APPROXIMATE)

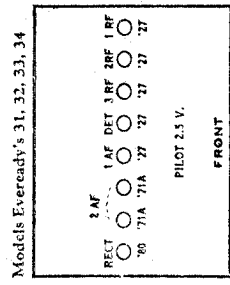
Tube	Filament	Plate	Grid
1 R.F.	A.C. 2.45	D.C. 100	D.C. 6
2 R.F.	A.C. 2.45	D.C. 100	D.C. 6
3 R.F.	A.C. 2.45	D.C. 100	D.C. 6
Detector	A.C. 2.45	D.C. 80	-
1 A.F.	A.C. 2.45	D.C. 100	D.C. 4.5
Output stage	A.C. 5.1	D.C. 175	D.C. 38
Rectifier Receiver	A.C. 5.1	-	-

(Line Voltage 119. Set on 115 Volt Tap. Volume Control on Full.)

*** Not used in 30-C chassis.**

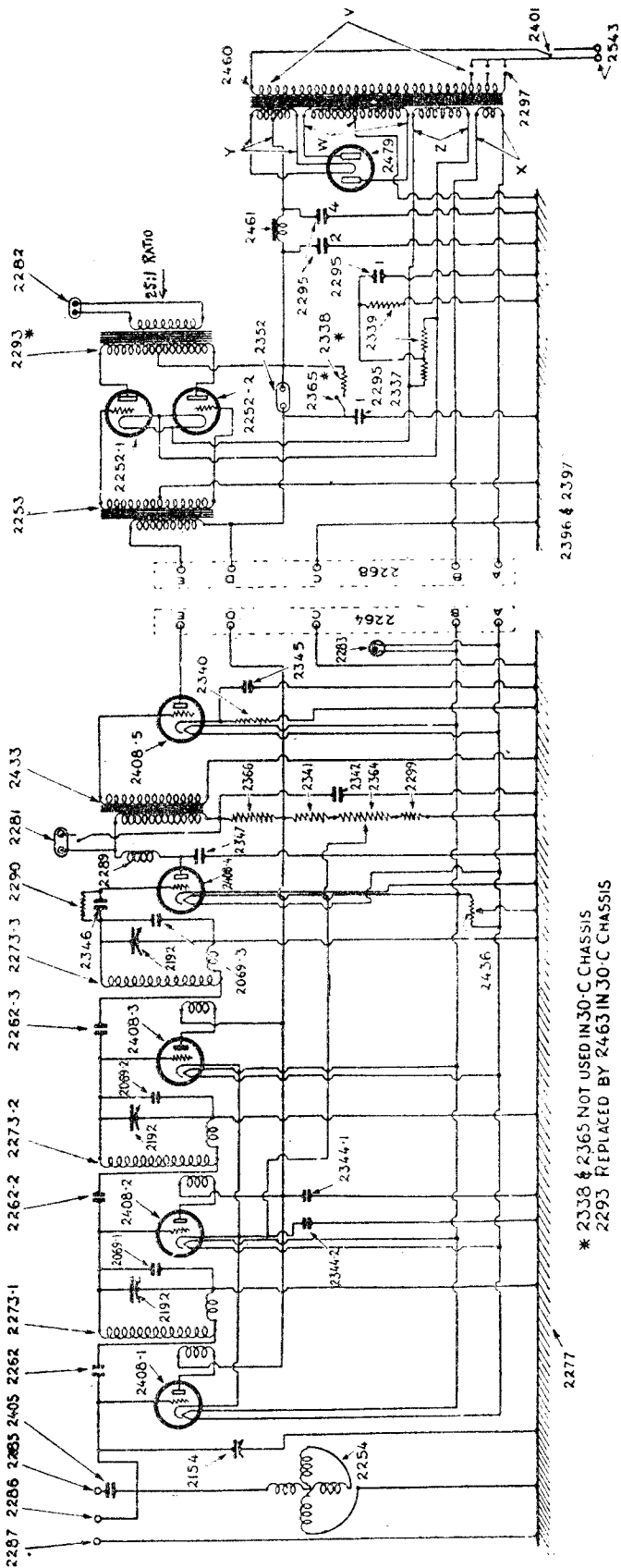
PART NO.	ELECTRICAL VALUE	PART NO.	ELECTRICAL VALUE
2290	2 megohms	2344-1	.5 mfd
2366	17500 ohms	2344-2	.5 mfd
2299	175 ohms	2405	.0001 mfd
2340	1750 ohms	2346	.0001 mfd
2341	3500 ohms	2347	.00025 mfd
2436	10 ohms	2343	mfd
2364	600 ohms	2345	mfd
2339	1000 ohms*		
2388	2500 ohms*		

* 2338 & 2365 NOT USED IN 30-C CHASSIS
2293 REPLACED BY 2463 IN 30-C CHASSIS



NATIONAL CARBON CO.

MODEL 42,43,44
Eveready



Part No.	Value	Unit
2344-1	.5	mfd
2344-2	.5	mfd
2405	.0001	mfd
2346	.0001	mfd
2347	.00025	mfd
2343	2	mfd
2345	1	mfd
2290	2	megohms
2366	17500	ohms
2299	175	ohms
2340	1750	ohms
2341	3500	ohms
2436	10	ohms
2364	600	ohms

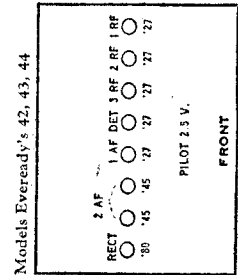
* 2338 & 2365 NOT USED IN 30-C CHASSIS
2293 REPLACED BY 2463 IN 30-C CHASSIS

NORMAL WORKING VOLTAGES (APPROXIMATE)

Filament	Plate	Grid
A. C. 2.45	D. C. 100	D. C. 6
A. C. 2.45	D. C. 100	D. C. 6
A. C. 2.45	D. C. 100	D. C. 6
A. C. 2.45	D. C. 50	D. C. 4.5
A. C. 2.45	D. C. 100	D. C. 50

2707 replaces 2339 900 ohms

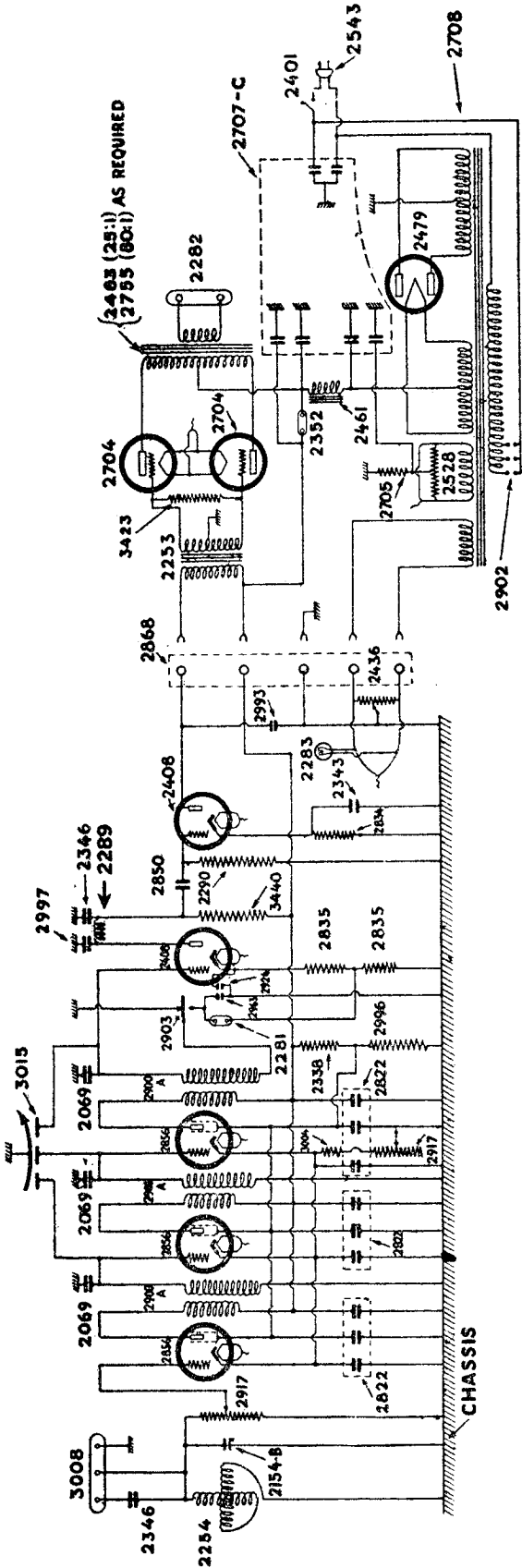
Series 40 Receivers employ a 5000 ohm field coil.



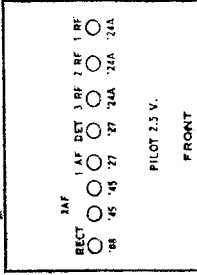
Models Eveready's 42, 43, 44

MODEL 52, 53, 54
Eveready

NATIONAL CARBON CO.



Models Eveready's 52, 53, 54



Part No.	Value	Notes
2290	2. megohms	* 3 in one can
2835	4000 ohms	
3440	125000 ohms	
3004	200 ohms	
2834	3000 ohms	.0001 mfd*
2338	2500 ohms	.5 mfd*
2996	2250 ohms	1 mfd
2917*	50 ohms	.01 mfd
2705	900 ohms	2. mfd
3423	100000 ohms	.002 mfd
		.004 mfd
		.0005 mfd

NORMAL WORKING VOLTAGES (APPROXIMATE)

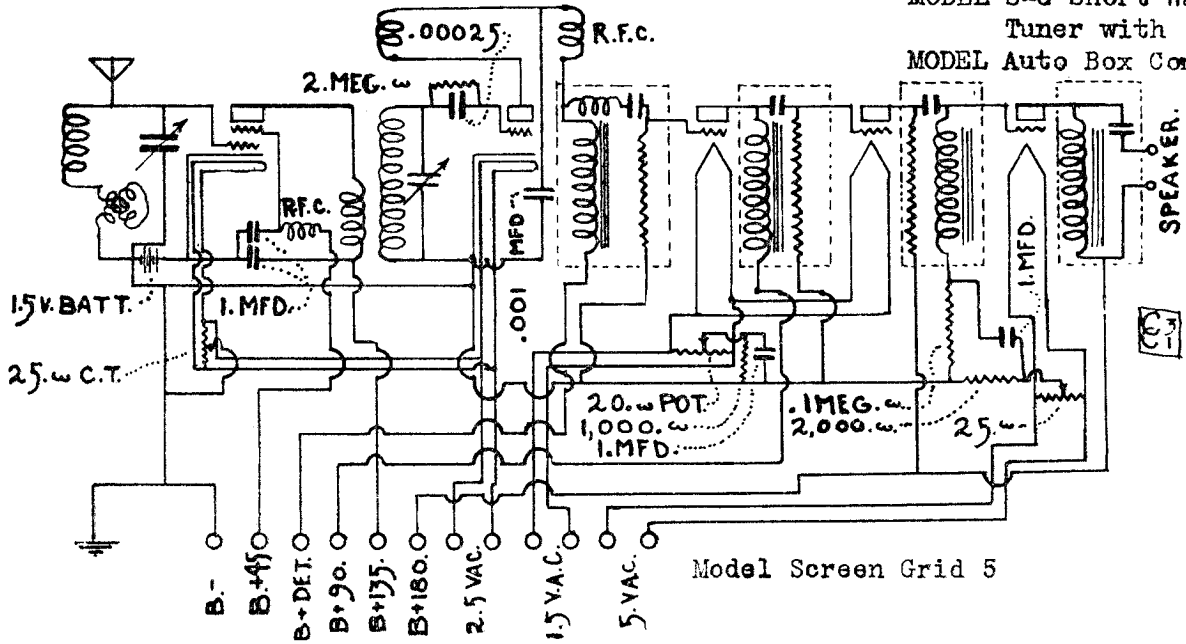
Tube	Filament	Plate	Grid	Screen
1 R.F.	A.C. 2.5	D.C. 160	D.C. 2.2	D.C. 70
2 R.F.	A.C. 2.5	D.C. 160	D.C. 2.2	D.C. 70
3 R.F.	A.C. 2.5	D.C. 160	D.C. 2.2	D.C. 70
Detector	A.C. 2.5	D.C. 65	D.C. 5.8	
1 A.F.	A.C. 2.3	D.C. 150	D.C. 11.7	
Output Stage	A.C. 2.4	D.C. 240	D.C. 46	
Rectifier	A.C. 4.8			

(Line Voltage 117. Set on 115 Volt Tap. Volume Control Position on Full.)

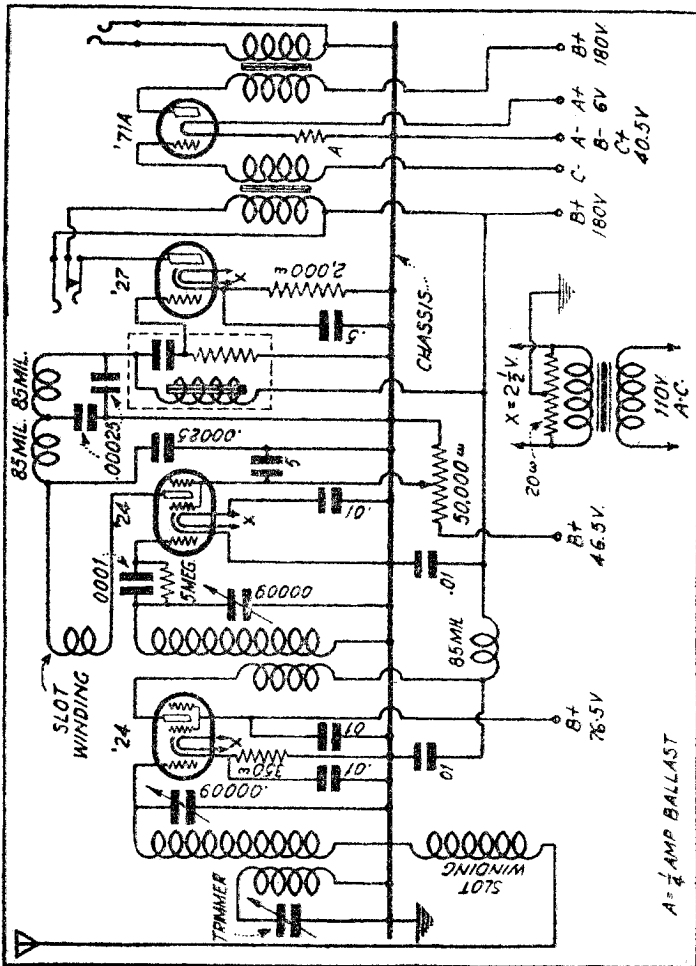
* Two sections
R-f section is 500,000 ohms
Screen voltage section is 10,000 ohms

THE NATIONAL COMPANY

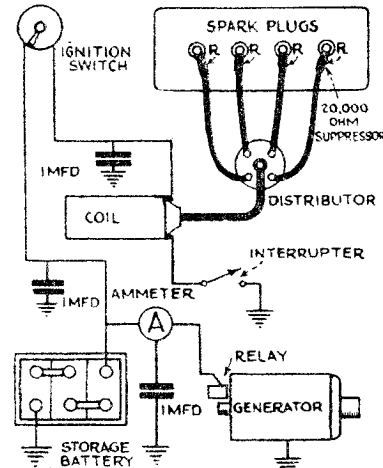
MODEL S-G 5
 MODEL S-G
 Short Wave Tuner
 MODEL S-G Short Wave
 Tuner with '71
 MODEL Auto Box Conn.



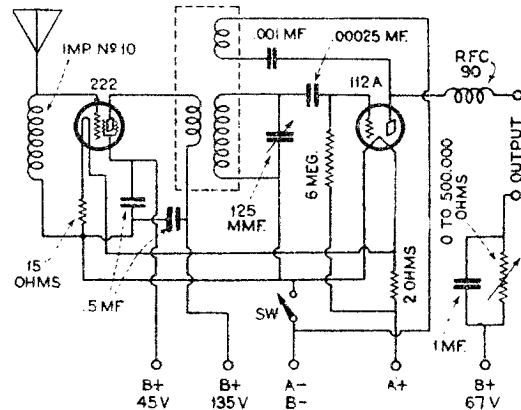
Model Screen Grid 5



Model Screen Grid Short Wave (71)



Model Auto Box Connections



Model Screen Grid S.W. Tuner

MODEL MB-30

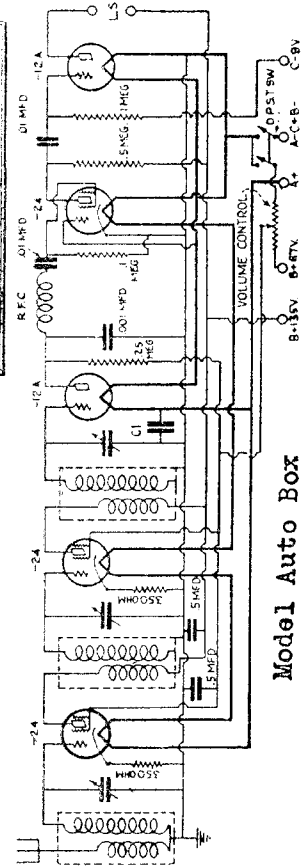
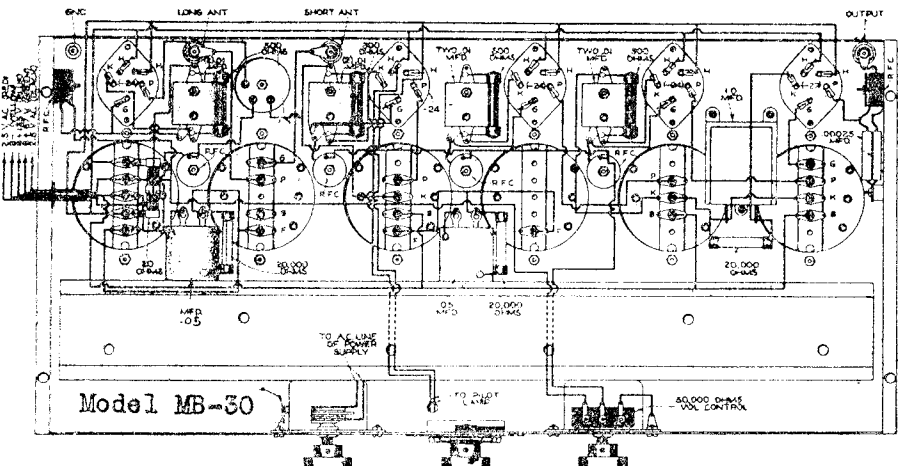
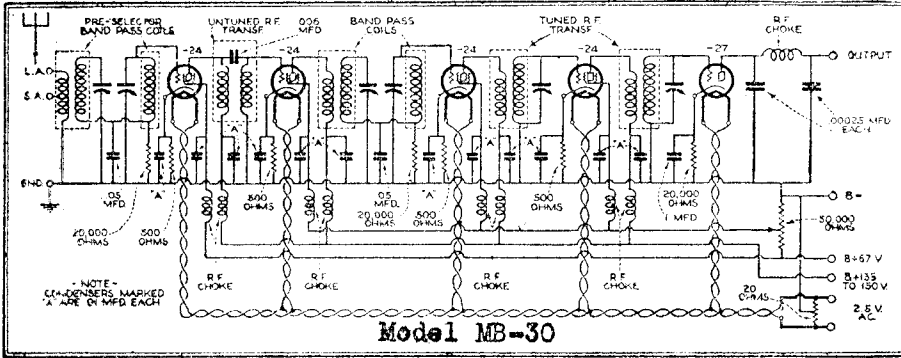
Schematic, Chassis

MODEL MB-29

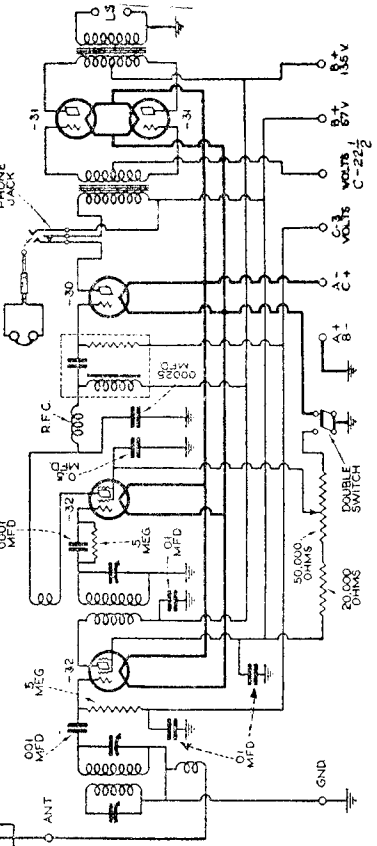
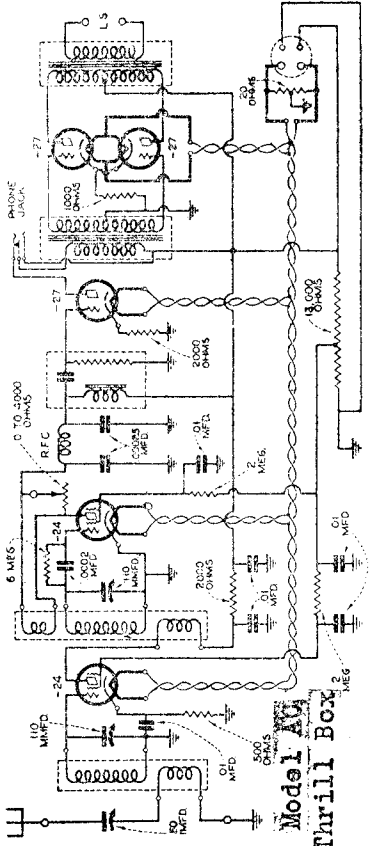
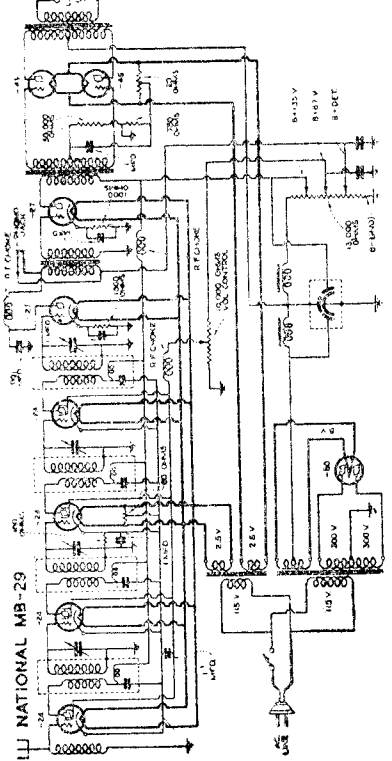
MODELS Thrill Box AC, Short Wave

MODEL Auto Box

THE NATIONAL COMPANY



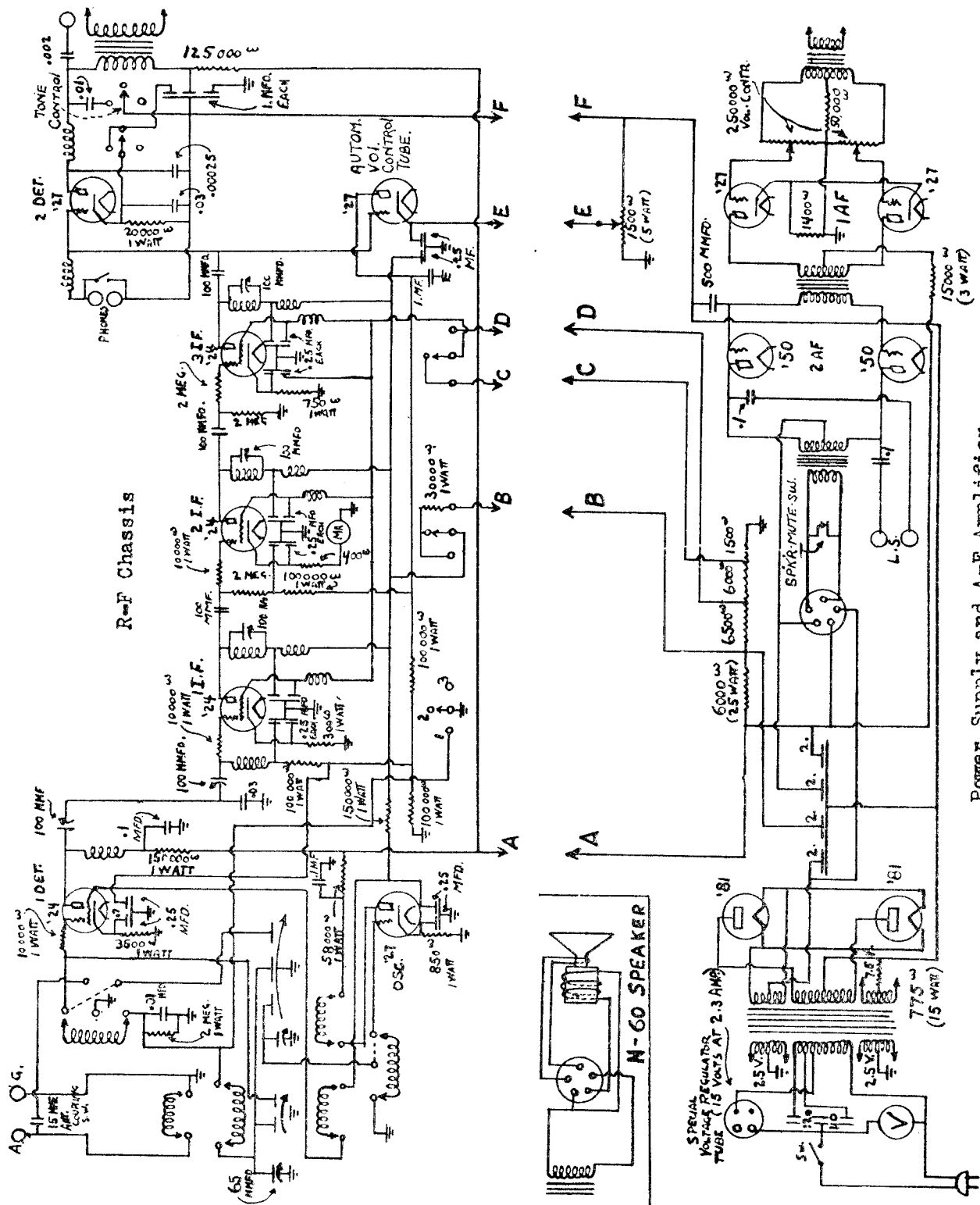
Model Auto Box
See preceding page for battery connections



Model Short-Wave Thrill Box 2-volt Tubes

MODEL Admiralty Super 12

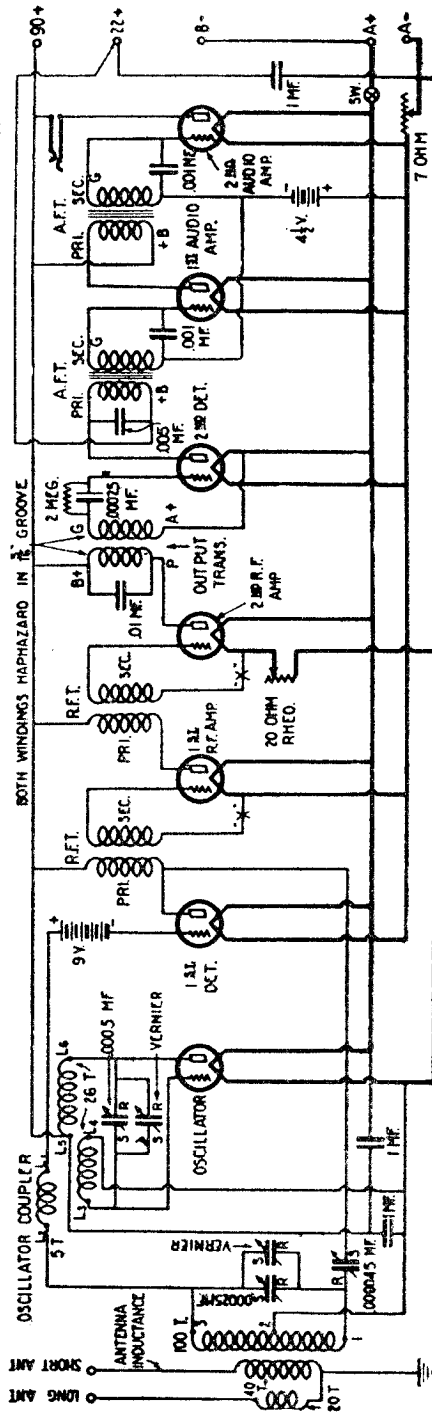
NORDEN-HAUCK, INC.



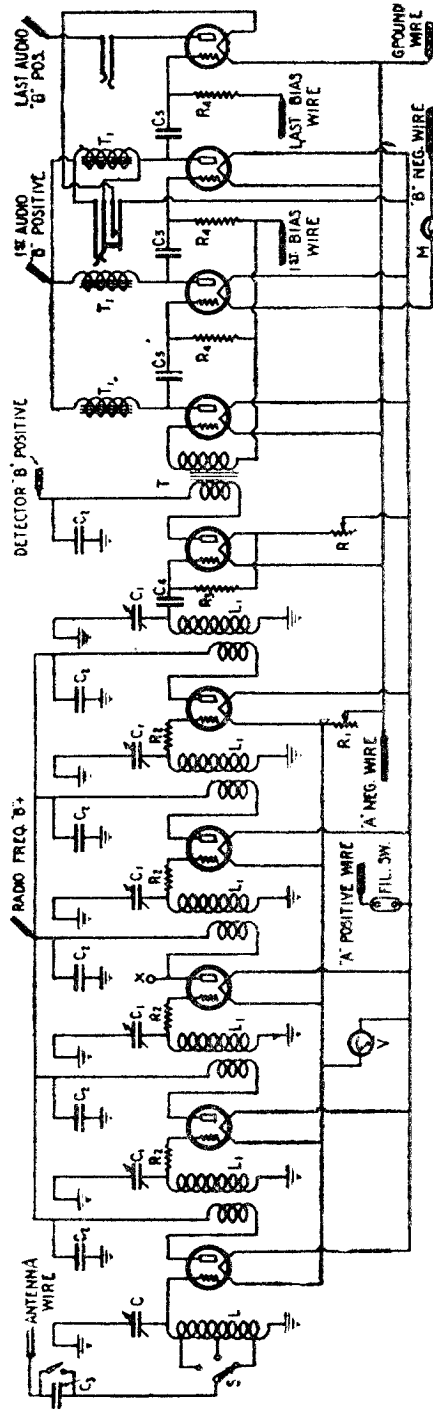
Power Supply and A-F Amplifier

NORDEN-HAUCK, INC.

MODEL C-7
MODEL Super 10



Model C-7 Norden Hauck super-heterodyne receiver.



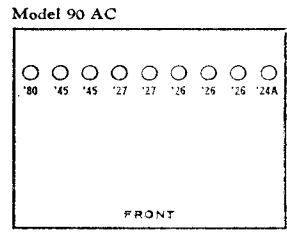
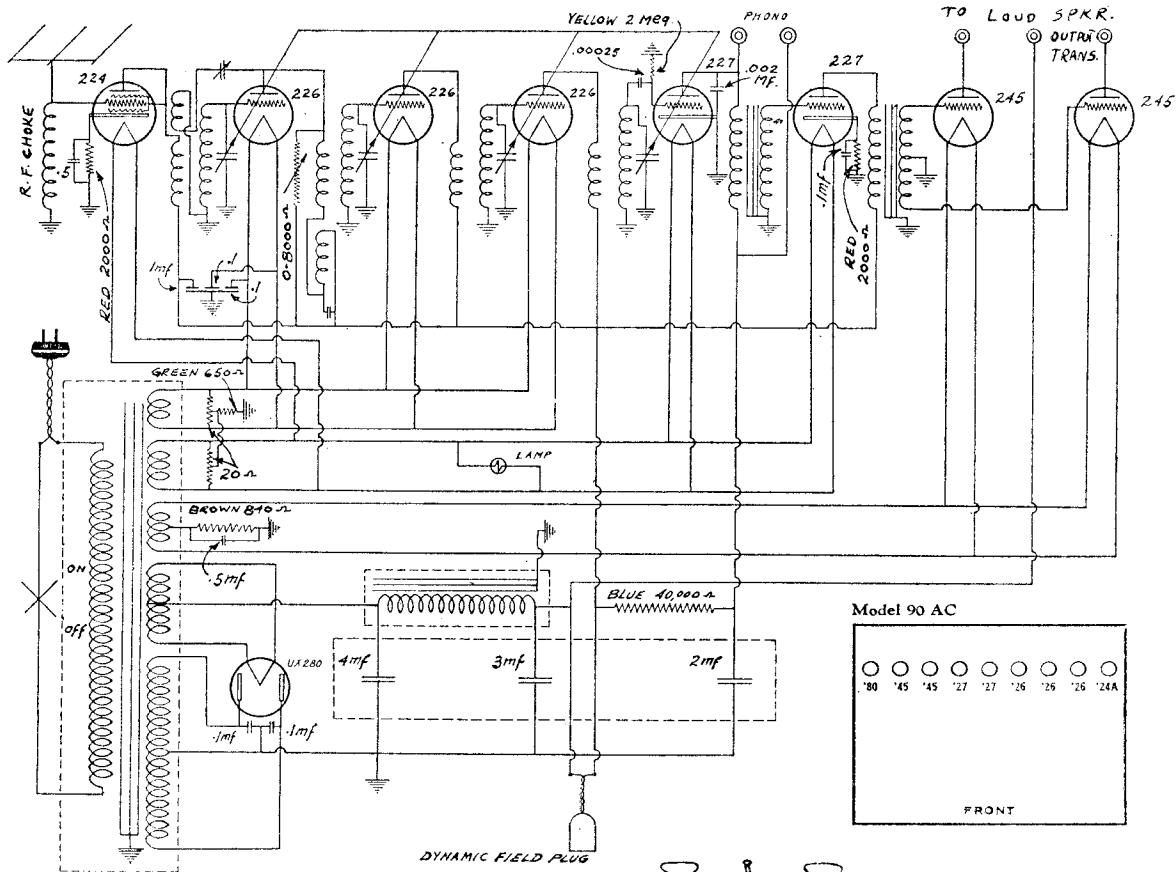
Super 10.

R is 20 ohms. R1 is 7 ohms. R2 is 750 ohms. R3 is 2 megohms.
R4 is 3000 ohms. C3 is .00025 mfd. C4 is .00025 mfd. C2 is
.5 mfd. C5 is .1 mfd.

MODEL 90

Schematic, Chassis
Voltage

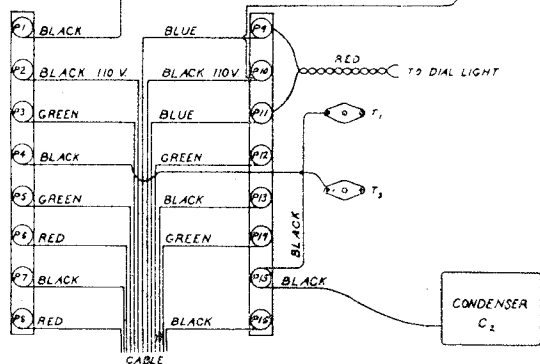
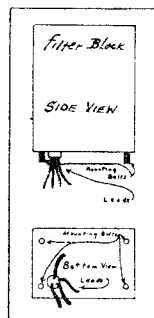
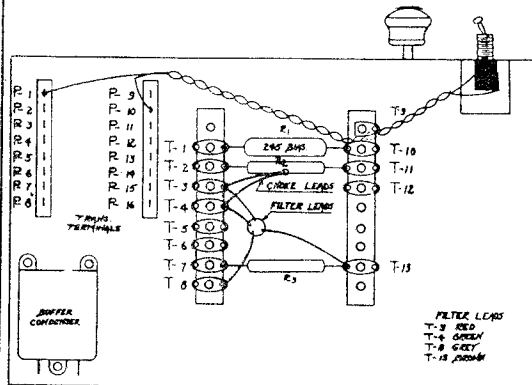
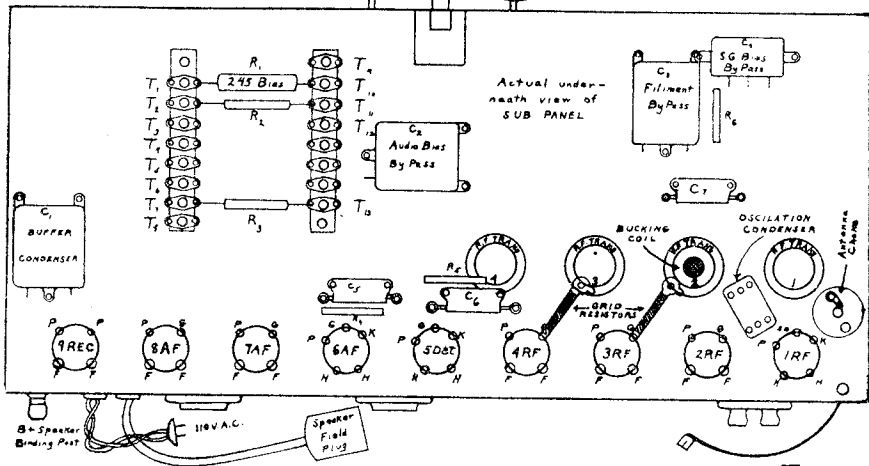
OZARKA, ING.



MODEL 90

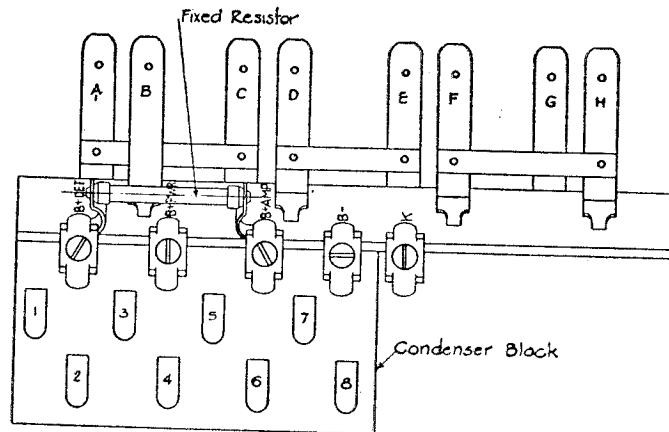
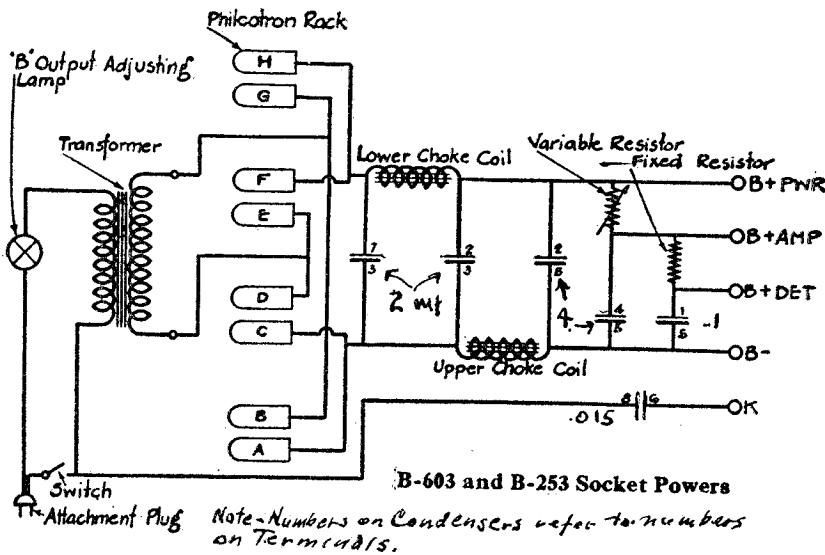
Tube Type	Plate	Grid
R.F. '24	160	160
R.F. '26	160	
R.F. '26	160	
R.F. '26	160	
Det. '27	40	
A.F. '27	150	
Pwr. '45	300	
Pwr. '45	300	

Volume Max.
All Volts to Ground.
Grid Volts Fil. To Grd.



PHILCO RADIO & TELEVISION CORP.

MODEL B-253
 MODEL B-603
 Power Units



Socket Power B, Type B-603

Supplies B power for sets having one to ten tubes—any standard type—including a power tube such as type UX-171, UX-112 or UX-120.

For use on 50- or 60-cycle, 105-125-volt alternating current.
 Full-wave Philco electrolytic rectifier.

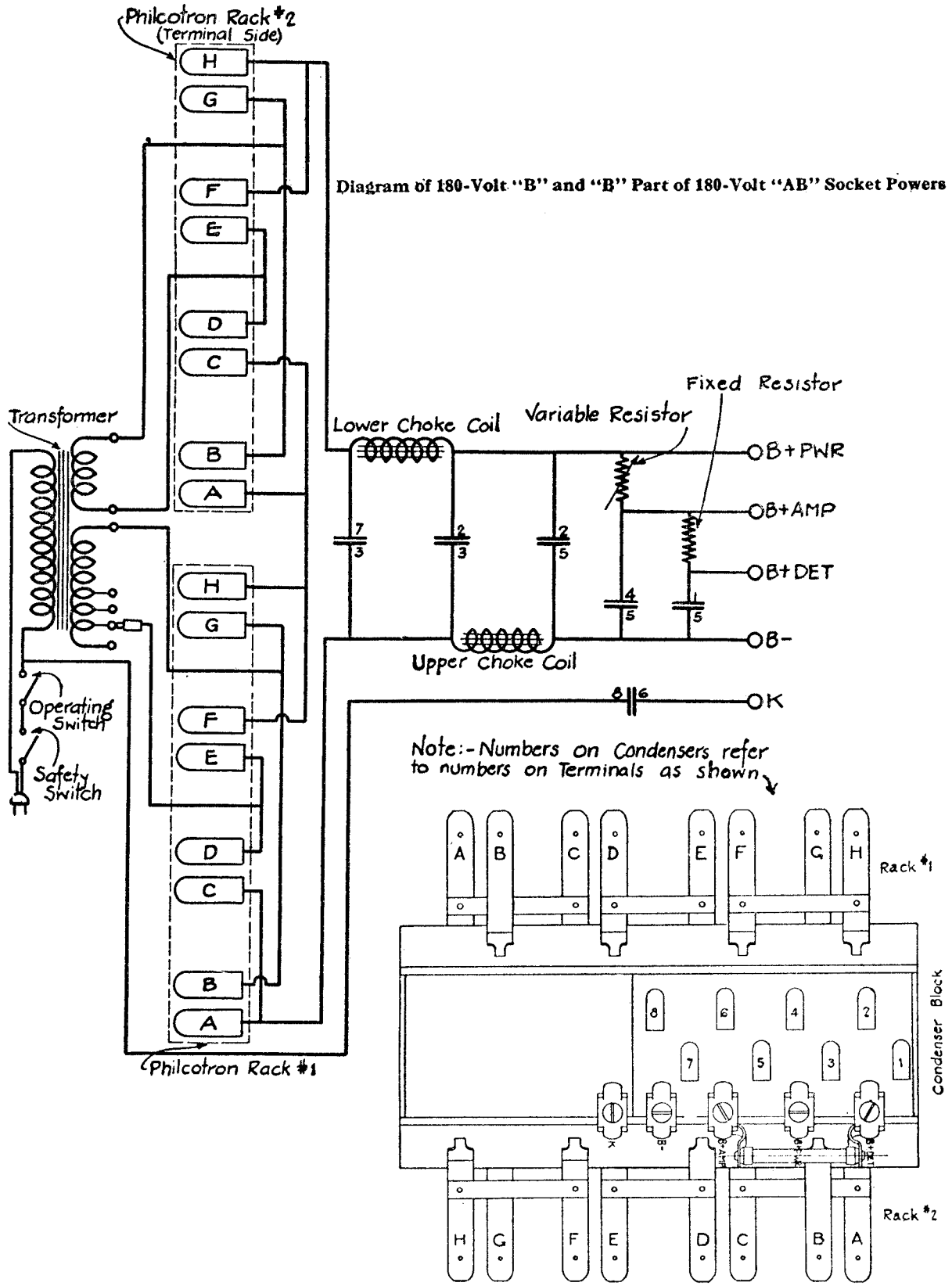
Average voltage at amplifier terminals:
 B+ PWR 135-150 volts, depending on load.
 B+ AMP 50-100 volts, adjustable.

Maximum continuous current rating: 50 milliamperes.
 Average current consumption: 12 A.C. watts.
 Overall dimensions: Length (front to back) 8⁵/₈" ; width 8¹/₈" ; height 7⁷/₈".

Socket Power B, Type B-253

Same as type B-603 except with special transformer and extra large filter for use on 25-, 30- or 40-cycle current as well as on 50 or 60 cycles for exceptional sets which may require the 25-cycle super-filter.

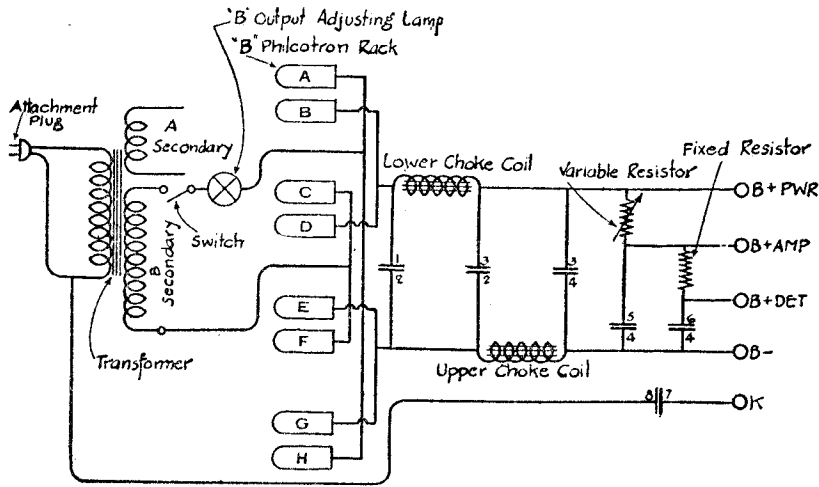
MODEL 180 B
 MODEL "B" Part of PHILCO RADIO & TELEVISION CORP.
 AB Unit



Philcotron Racks and Condenser Lugs Marked for Testing for 180-Volt "B" and "B" Part of 180-Volt "AB" Socket Powers

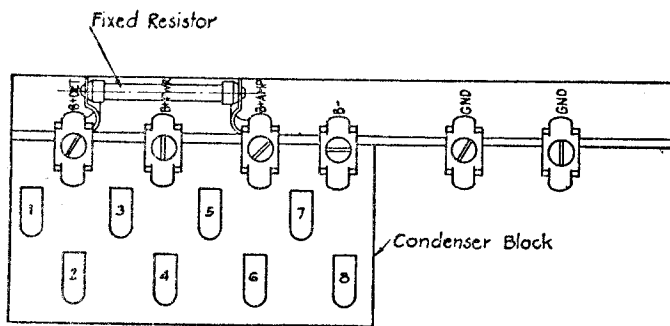
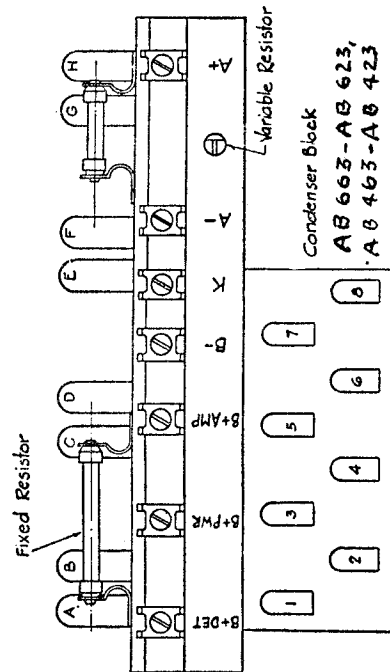
PHILCO RADIO & TELEVISION CORP.

MODEL AB-423, AB-463
 AB-623, AB-663
 Power Units

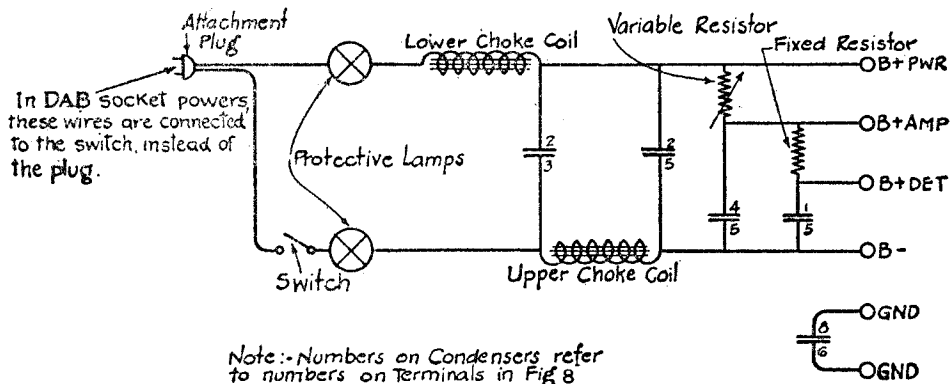


Note:—Numbers on Condensers refer to Terminal

Schematic Wiring Diagram of Types AB-663, AB-623, AB-463, AB-423 Socket Powers



Terminal Strip and Condenser Block of "DB" and "DAB" Socket Powers



Wiring Diagram of "DB" and "B" Part of "DAB" Socket Powers

MODEL DB

MODEL AB-463,

AB-623,

AB-663

PHILCO RADIO & TELEVISION CORP.

Specifications

Socket Power B, Type DB

Similar to type B-603 for use on 105-125-volt *direct current*.

Supplies B power at detector and two amplifier voltages for sets having one to ten tubes of any standard type.

Maximum continuous current rating: 50 milliamperes.

Average current consumption: 3 D.C. watts.

Dimensions same as type B-603.

Socket Power AB, Type AB-663

Supplies A power at 6 volts and B power at detector and two amplifier voltages for receiving sets having from one to eight 5-volt storage battery tubes including a power tube such as type UX-171 or UX-112. For use on 50- or 60-cycle, 105-125-volt alternating current.

A battery: Philco type UD-86

A rectifier: Extra large, type AA Philcotron.

	LOW	MEDIUM	HIGH
A trickle charge rates, D.C. afnps.	.2	.4	.8
A current consumption, A.C. watts.	15	25	45

B rectifier: Full-wave Philco electrolytic

Average B voltage at amplifier terminals:

B+ PWR 135-150 volts, depending on load.

B+ AMP 50-100 volts, adjustable.

Maximum continuous B current rating: 50 milliamperes.

Average B current consumption: 12 A.C. watts.

Overall dimensions: Length (front to back) 12 $\frac{3}{4}$ " ; width 13 $\frac{5}{8}$ " ; height 8 $\frac{1}{2}$ " .

Socket Power AB, Type AB-623

Same as type AB-663 except with special transformer and extra large B current filter for use on 25-, 30- or 40-cycle current as well as on 50 or 60 cycles for exceptional sets which may require the 25-cycle super-filter.

Socket Power AB, Type AB-463

Supplies A power at 4 volts and B power at detector and two amplifier voltages for sets having from one to ten 3-volt dry cell tubes, including Radiolas. For use on 50- or 60-cycle, 105-125-volt alternating current.

A battery: Philco Type UD-44

A rectifier: Large, type A Philcotron

	LOW	MEDIUM	HIGH
A trickle charge rates, D.C. amps:	.075	.15	.30
A current consumption, A.C. watts:	9	12	18

B rectifier: Full-wave Philco electrolytic

Average B voltage at amplifier terminals

B+ PWR 135 volts.

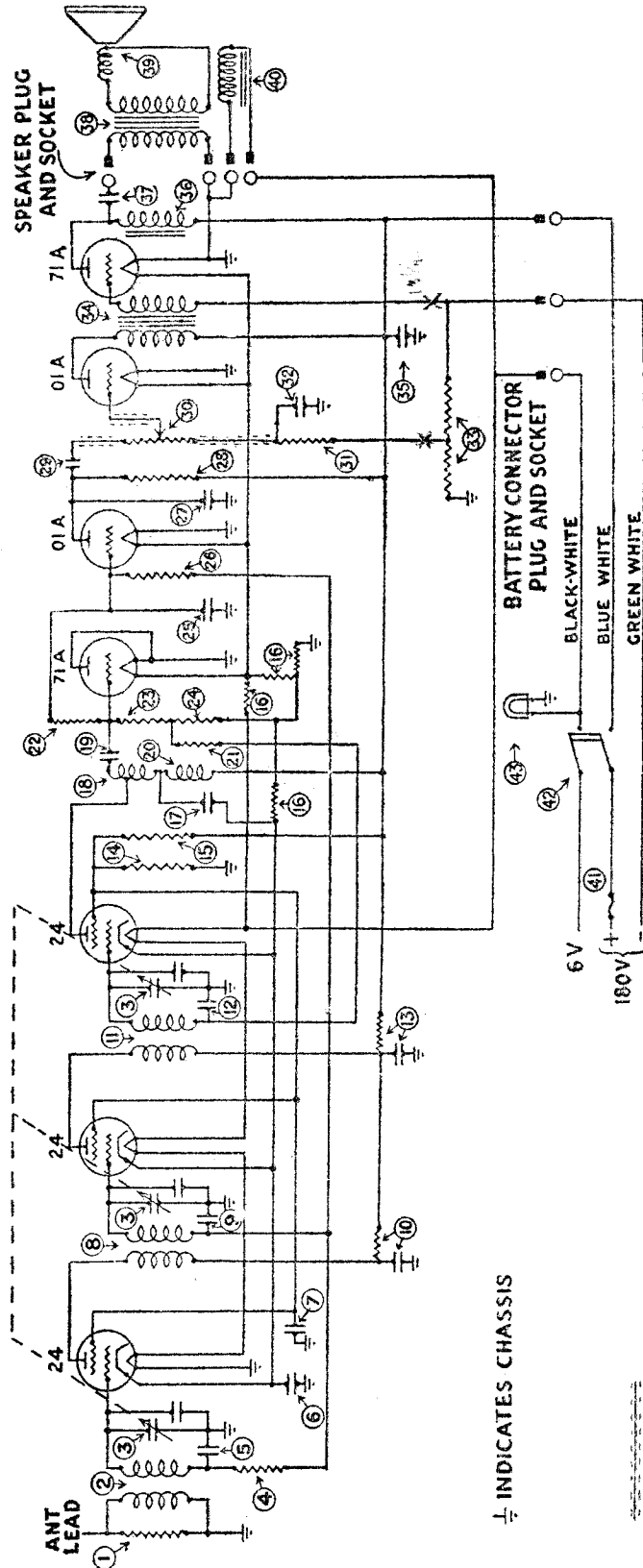
B+ AMP 50-90 volts, adjustable.

Maximum continuous B current rating: 50 milliamperes.

Average B current consumption: 10 A.C. watts.

Overall dimensions: Length (front to back) 12 $\frac{3}{4}$ " ; width 13 $\frac{5}{8}$ " ; height 8 $\frac{1}{2}$ " .

MODEL 3
Transitone
Schematic
Parts List
PHILCO RADIO & TELEVISION CORP.



⊥ INDICATES CHASSIS

----- INDICATES GROUNDED SHIELDING

①	Resistor	(100,000 ohms — 1/2 watt)	4411
②	Resistor	(100,000 ohms — 1/2 watt)	4411
③	Resistor	(250,000 ohms — 1/2 watt)	4410
④	Resistor	(50,000 ohms — 1 watt)	4237
⑤	Resistor	(25,000 ohms — 1 watt)	3656
⑥	Resistor	(4-section)	4407
⑦	Condenser	(.00025 mfd)	3082
⑧	Fourth R. F. Transformer		3775-B
⑨	Condenser	(.00005 mfd)	3774
⑩	R. F. Choke		3256-A
⑪	Resistor	(1,000,000 ohms — 1/2 watt)	4409
⑫	Resistor	(250,000 ohms — 1/2 watt)	4410
⑬	Resistor	(100,000 ohms — 1/2 watt)	4411
⑭	Resistor	(100,000 ohms — 1/2 watt)	4411
⑮	Condenser and Resistor	(.05 mfd with 250 ohms)	3615-C

COMPENSATING

Compensating condensers in all Philco Transitone Receivers are carefully adjusted at the factory, and ordinarily need not be readjusted.

If necessary to readjust, a good oscillator should be used. With the Receiver and oscillator set up for operation, and the volume control of the Receiver turned on full—adjust the oscillator signal to a frequency between 1000 and 1200 kilocycles, or 100 and 120 on the Receiver. Tune the Receiver sharply to the signal and then reduce the oscillator signal so that it is barely audible in the Speaker.

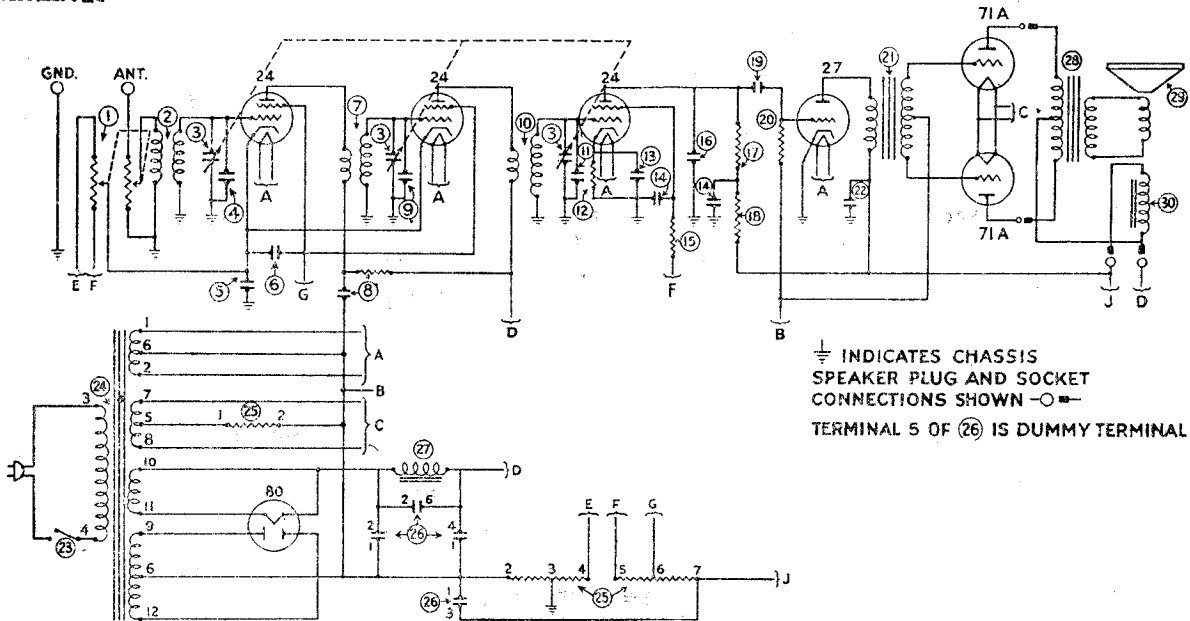
Using the special fibre wrench, adjust the third compensating condenser to that point at which the maximum signal is heard in the Speaker, then adjust the second and finally the first condenser in the same manner, always adjusting for that position which gives the maximum signal.

After the adjustments are completed tune the Receiver to several broadcast programs to make sure that the stations are tuned in at the proper place on the tuning scale.

⑯	Condenser	(.00025 mfd)	3082
⑰	Resistor	(1,000,000 ohms — 1 watt)	4414
⑱	Resistor	(.00025 mfd)	3082
⑲	Resistor	(100,000 ohms — 1/2 watt)	4411
⑳	Condenser	(.015 mfd)	3793-D
㉑	Volume Control		4463
㉒	Resistor	(250,000 ohms — 1/2 watt)	4410
㉓	Condenser	(.25 mfd)	4487
㉔	Resistor	(2-section)	4408
㉕	Audio Transformer		3241
㉖	Condenser	(2.0 mfd)	4418
㉗	Audio Choke		4485
㉘	Output Condenser	(1.0 mfd)	4420

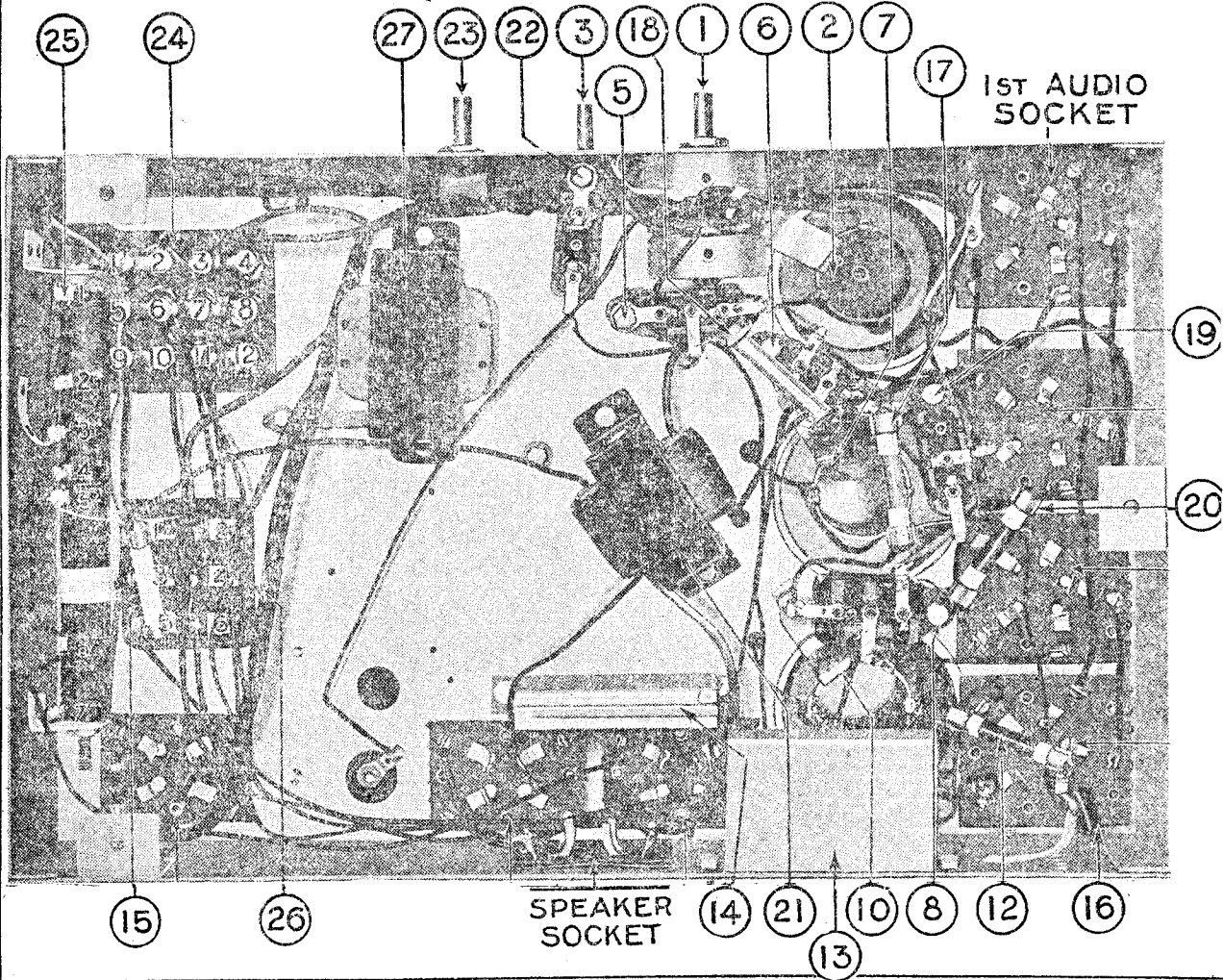
MODEL 20, 20-A
Chassis
Schematic

PHILCO RADIO & TELEVISION CORP.



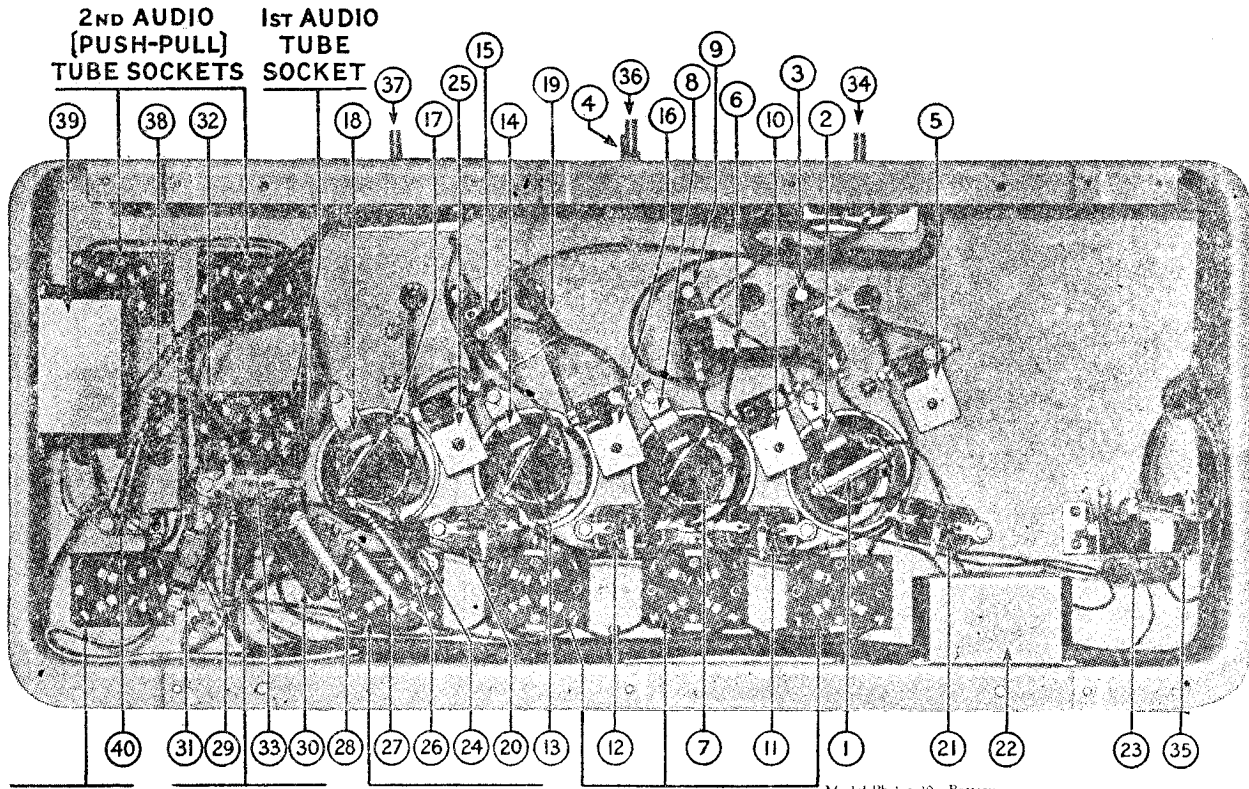
DIFFERENT CIRCUIT ARRANGEMENT FOR MODEL 20-A

Model 20-A for use on 25-60 cycle lines is wired differently than the Model 20. The plate supply lead for the two 24 R. F. Tubes is taken from the low side of the Speaker field Coil. The lead "D" to the 24 tubes should be changed to "J" for the Model 20-A only. This will change the plate voltage from 250 volts to 115-125 volts. The plate current readings will also be lower than those given in the table.



MODEL 30
Chassis
Schematic

PHILCO RADIO & TELEVISION CORP.

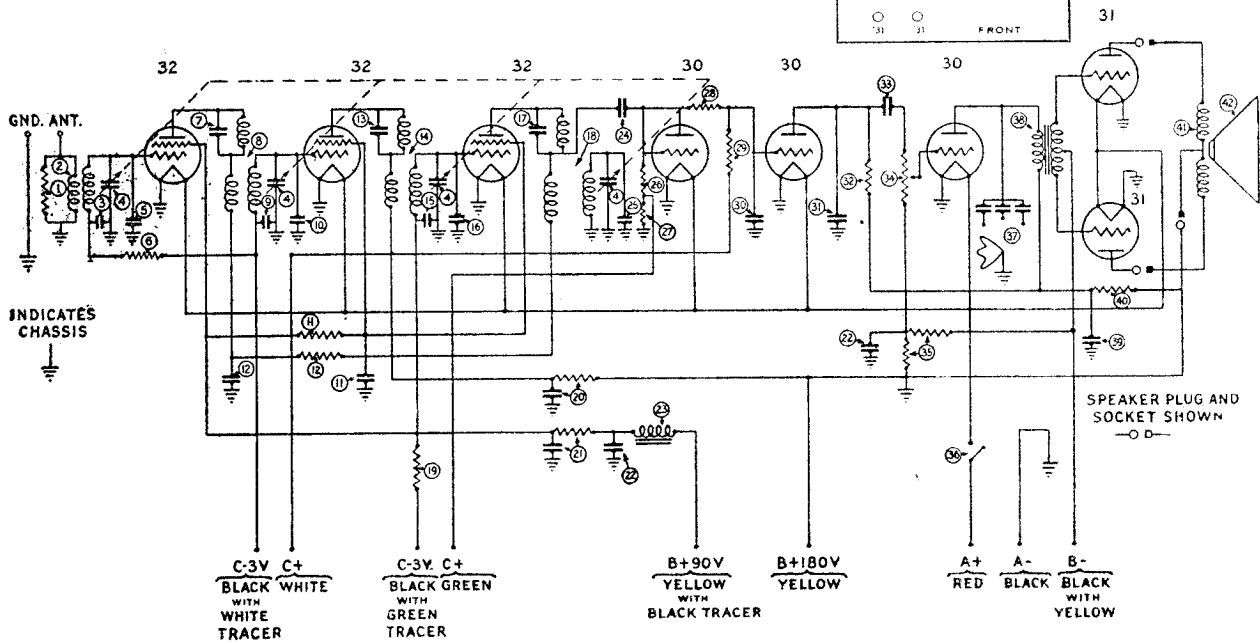


Model Philco 10—Battery

DET	3 RF	2 RF	1 RF
○	○	○	○
30	32	32	32
DFT AMP			
○			
126			
1 AF			
○			
30			
2 AF			
○			
31	31		

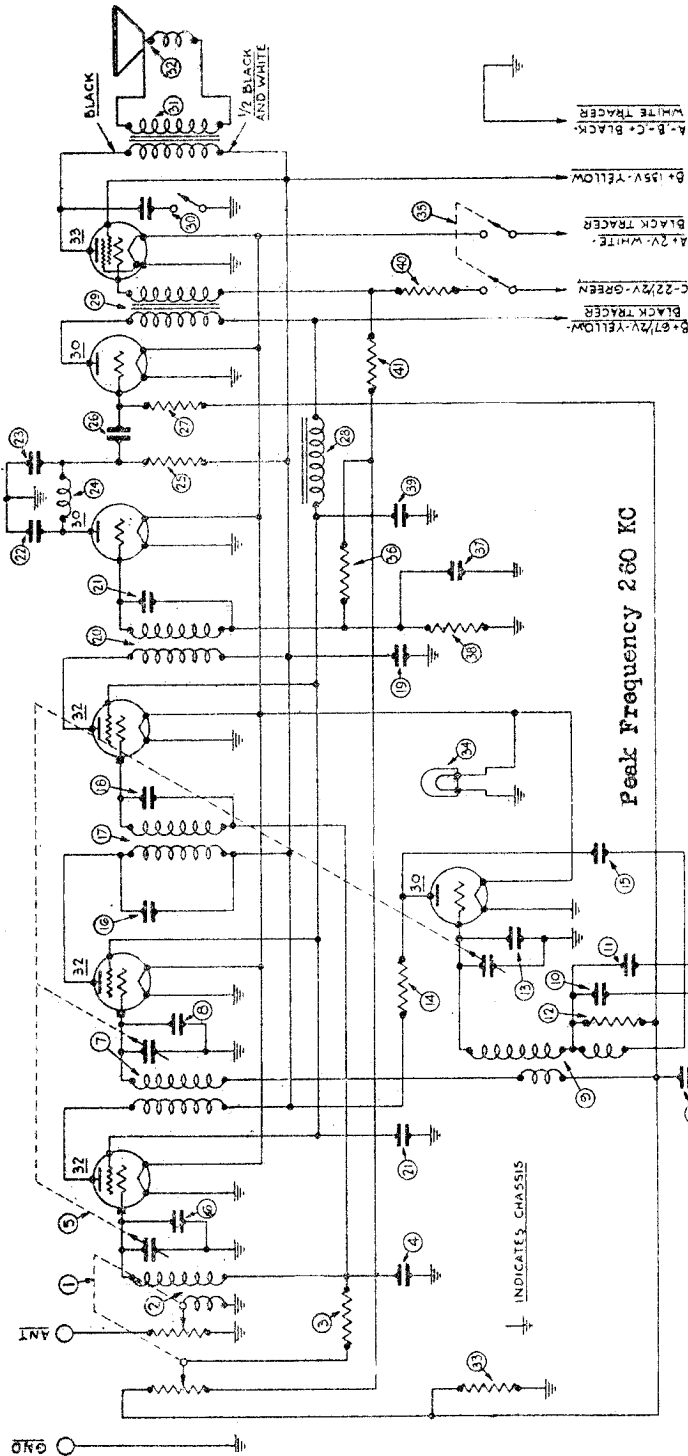
FRONT

Model 30



PHILCO RADIO & TELEVISION CORP.

MODEL 35
Schematic
Voltage



Model 35-B is similar to Model 35 except that the pilot light is omitted. Furthermore, a resistor # 5792 is supplied with Model 35-B. The Model 35-B is intended for use with the Air-Cell battery.

Tube Socket Readings Taken with Set Tester.

Tube	Circuit	Filament Volts	Plate Volts	Grid Volts	Plate Current Milliamperes	Screen Grid Volts
32	R. F.	1.9	133	...	3.0	60
32	1st Det.	1.9	133	...	3.0	63
30	Osc.	1.9	60	...	1.5	...
32	I. F.	1.9	133	...	3.5	60
30	2nd Det.	1.9	55	2.5	.05	...
30	1st Audio	1.9	65	...	.05	...
33	Output	1.9*	125*	7*	12.*	135*

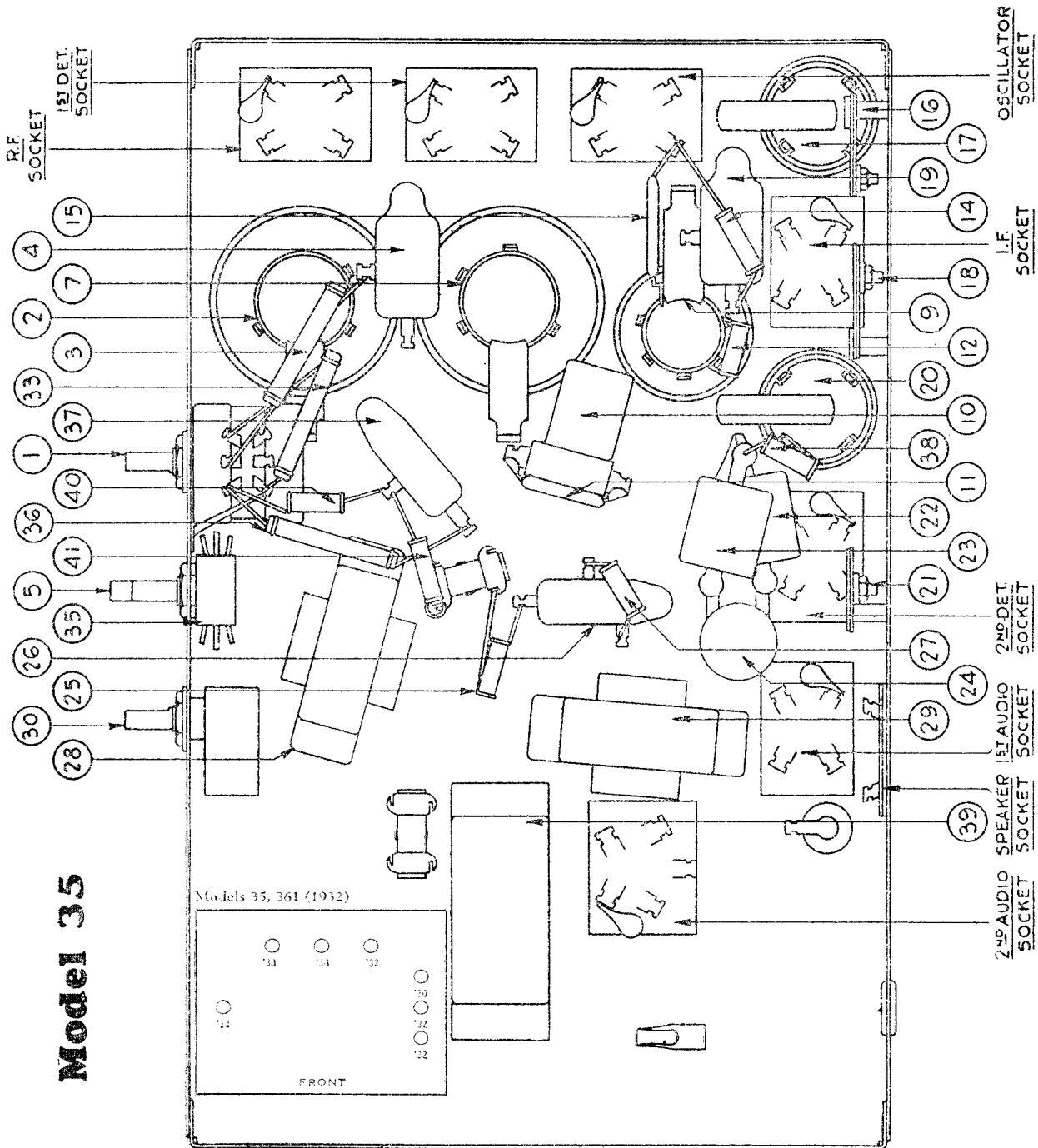
All readings taken with volume control at maximum, antenna disconnected, and ground connected. *These readings must be taken from the under side of the chassis using test prods and leads unless the set checker is specially equipped for testing pentode tubes.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the

The Model 35 Receiver is designed for use with the latest 2-volt filament type tubes only.

MODEL 35
Chassis
Data

PHILCO RADIO & TELEVISION CORP.



Model 35

Resistor Data

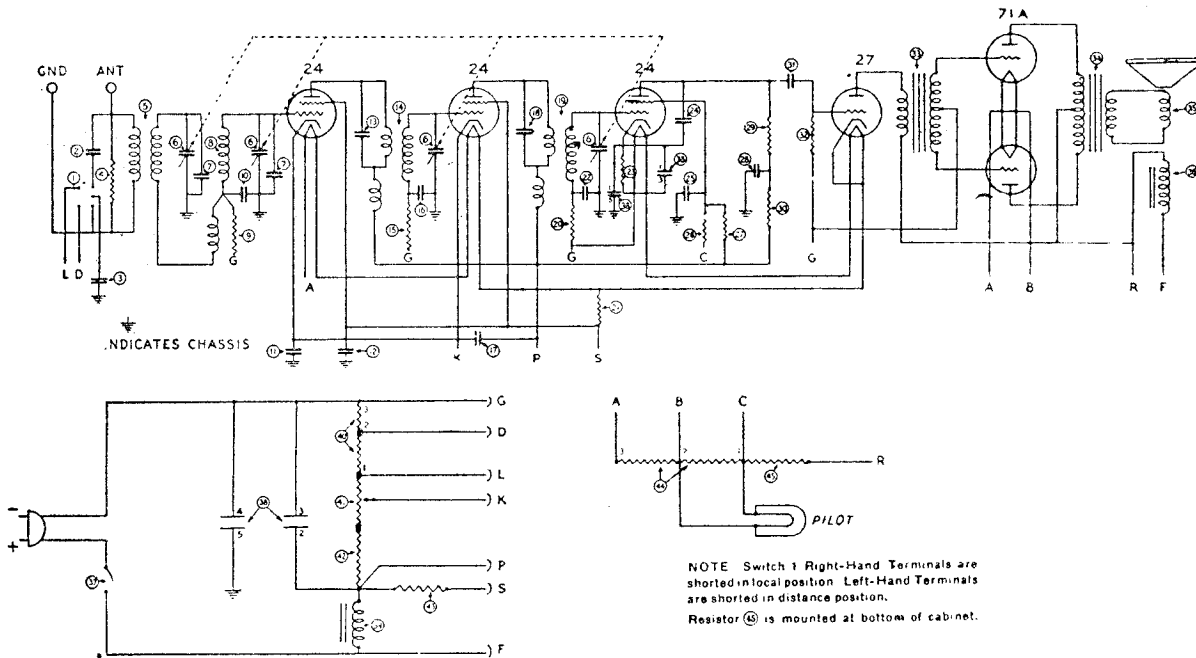
Condenser Data

No. on Figs. 1 and 2	COLOR			Resistance Ohms
	Body	Tip	Dot	
(4) (25)	Red	Yellow	Yellow	240,000
(12) (11)	Green	Brown	Orange	51,000
(17)	Yellow	White	Yellow	490,000
(15) (14)	Orange	Black	Red	3,000
(16)	Orange	Red	Orange	32,000
(13) (18)	White	White	Orange	99,000
(10) (19)	Green	Black	Red	5,000
(14)	Brown	Black	Orange	10,000

No. on Figs. 1 and 2	Capacity—MFD
(1) (16) (21)	.09
(2) (17) (22)	.000410
(3) (18) (23)	.000110
(4) (19) (24)	.002
(5) (20) (25)	.01
(6) (21) (26)	2.

MODEL 40 DC

PHILCO RADIO & TELEVISION CORP.



TUBE SOCKET READINGS
Line Voltage 115

Tube	Circuit	Filament	Plate	Screen Grid	Control Grid	Plate Mills
24	1 R. F.	2.1	100	75	.4	2.7
24	2 R. F.	2.1	100	75	.4	2.7
24	Detector	2.1	45	15	1.8	....
27	1 A. F.	2.4	87	..	.2	2.7
71-A	2 A. F.	5	85	..	13	15
71-A	2 A. F.	5	85	..	13	15

Readings must be taken with volume control on full and local distance switch in distance position.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the table.

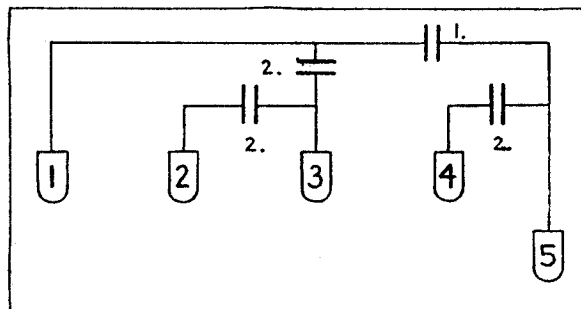
RESISTOR VALUES

No. on Fig. 2	Terminals	Ohms Resistance
④ - ②① - ④③	. . . . .	5,000
⑨ - ①⑤	. . . . .	33,000
②① - ④②	. . . . .	25,000
②③ - ③①	. . . . .	100,000
②⑥	. . . . .	13,000
②⑦	. . . . .	70,000
②⑧ - ③②	. . . . .	500,000
④①	. . . . . {1-2	800
	. . . . . {2-3	250
④④	. . . . . {1-2	2
	. . . . . {2-3	4
④⑤	(Note: 20-inch - External)	53

CONDENSER CAPACITIES

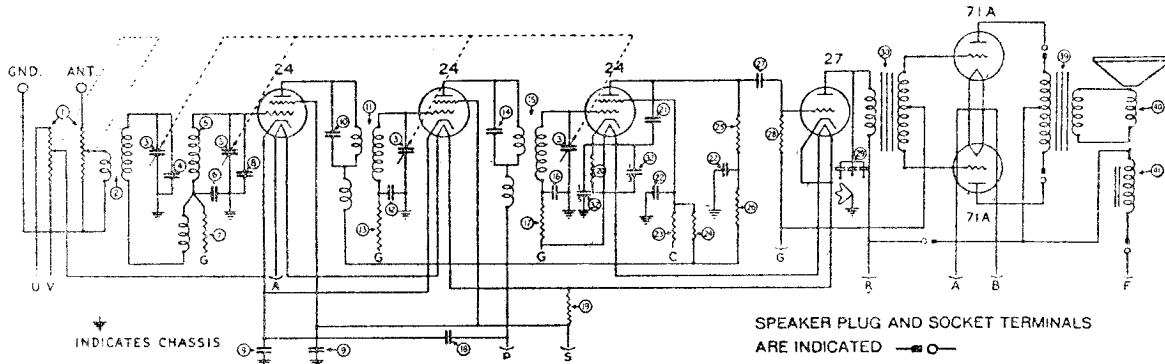
No. on Fig. 2	Capacity
②	.002
③ - ③①	.01
⑩ - ①⑥ - ①⑦ - ②②	.05
⑪ - ①② - ②⑤ - ②⑧	.25
②④	.0005

③⑧ Filter Condenser Part No. 4067



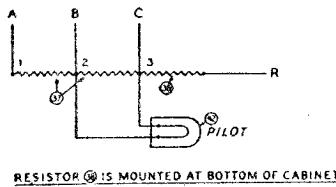
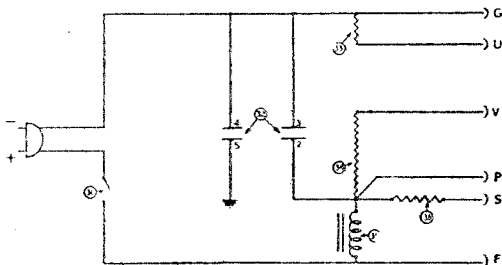
PHILCO RADIO & TELEVISION CORP.

MODEL 41 DC, 42 DC
Schematic
Voltage
Values



INDICATES CHASSIS

SPEAKER PLUG AND SOCKET TERMINALS ARE INDICATED



RESISTOR (R) IS MOUNTED AT BOTTOM OF CABINET

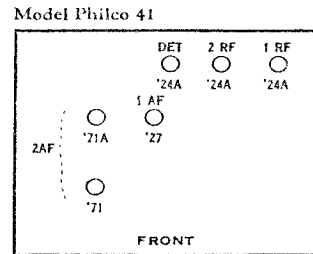


Table 1—TUBE SOCKET READINGS
Line Voltage 115

Tube	Circuit	Filament	Plate	Screen Grid	Control Grid	Plate Mills
24	1 R. F.	2.1	100	75	.4	2.7
24	2 R. F.	2.1	100	75	.4	2.7
24	Detector	2.1	45	15	1.8	...
27	1 A. F.	2.4	87	..	.2	2.7
71-A	2 A. F.	5	85	..	13	15
71-A	2 A. F.	5	85	..	13	15

Readings must be taken with volume control on full.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the table.

Table 2—RESISTOR VALUES

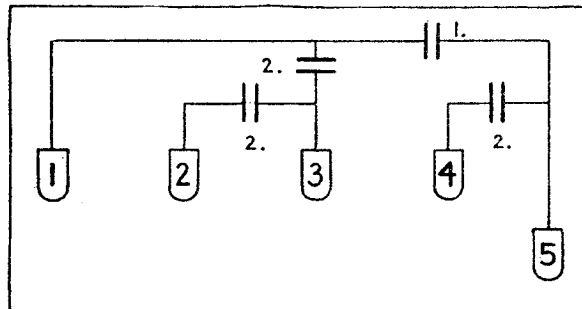
No. on Figs. 2 and 3	Terminals	Ohms Resistance
(17) — (28)	..	5,000
(23)	..	13,000
(19) — (34)	..	25,000
(7) — (13)	..	33,000
(24)	..	70,000
(20) — (26)	..	100,000
(25) — (28)	..	500,000
(33)	..	250
(37)	{ 1-2 ..	4
	{ 2-3 ..	2
(38)	(Note: 20-inch — External)	53

(32) Filter Condenser

Part No. 4067

Table 3—CONDENSER CAPACITIES
(Other than Filter Condenser)

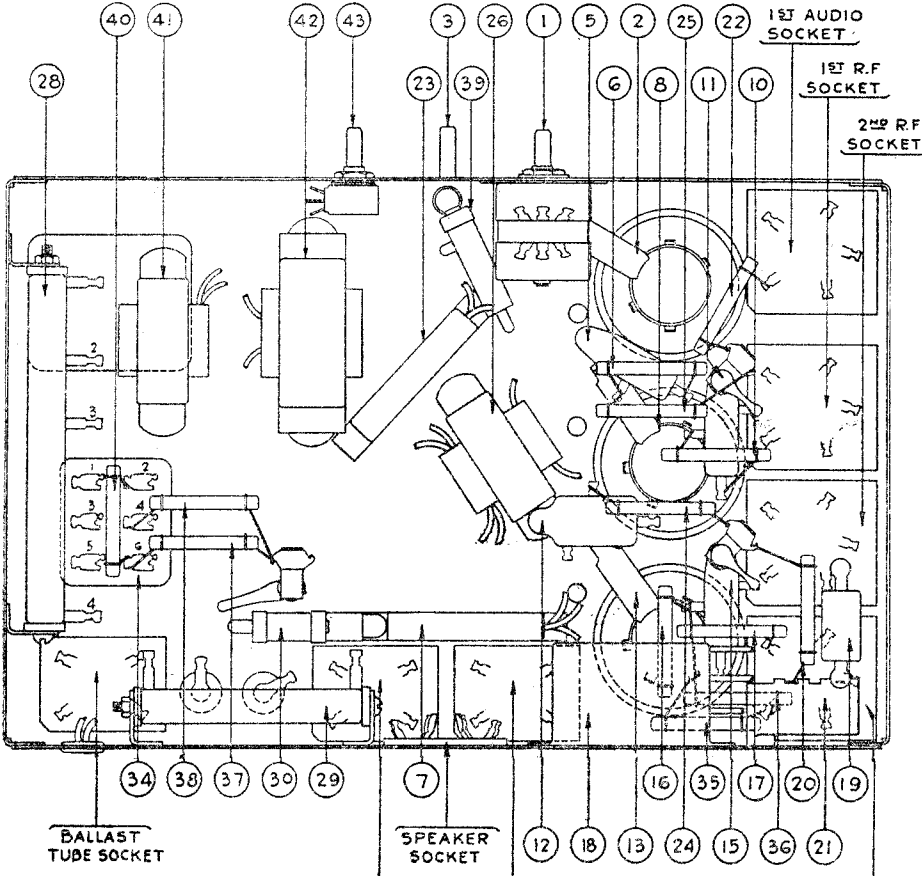
No. on Figs. 2 and 3	MFD. Capacity
(27)	.01
(6) — (12) — (16) — (18)	.05
(9) — (22)	.25
(21)	.0005



MODEL 46, 46-E DC
Chassis
Resistor Data

PHILCO RADIO & TELEVISION CORP.

Models 46 and 46-E



—Resistor Data

Color	Tip	Dot
Tubular		
Tubular		
Flat Wire Wound		
Flat Wire Wound		
Black		Red
Green		Orange
Orange		Brown
Green		Jade Green
White		White
Red		Yellow
Yellow		White

Resistance
16
105
1500
200
250
350
5,000
32,000
51,000
70,000
99,000
240,000
490,000

Terminal
1-2
2-3
3-4

Resistor Data for Model 46-E

No. on Figs. 2 and 3
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
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Color
Tubular
Tubular
Flat Wire Wound
Flat Wire Wound
Yellow
Belgium Blue
Belgium Blue—Yellow Tip
Jade Green
Silver Gray—Yellow Tip
White
Battis Gray

Resistance
10
14
29
200
210
250
5,000
13,000
33,000
70,000
100,000
250,000
500,000

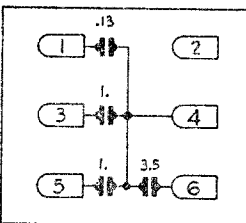
Terminal
2-3
1-2
3-4

No. on Figs. 2 and 3
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
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Condenser Data (Other than Filter Condenser) 2nd AUDIO PUSH-PULL SOCKETS

No. on Figs. 2 and 3	Capacity MFD
④	.0005 For
②	.01 Model 46-E DC
①-③-⑤	.05
⑦	.05 and 250-ohm resistor
⑩-⑪-⑫	.25 (two sections)

Part No.—4860



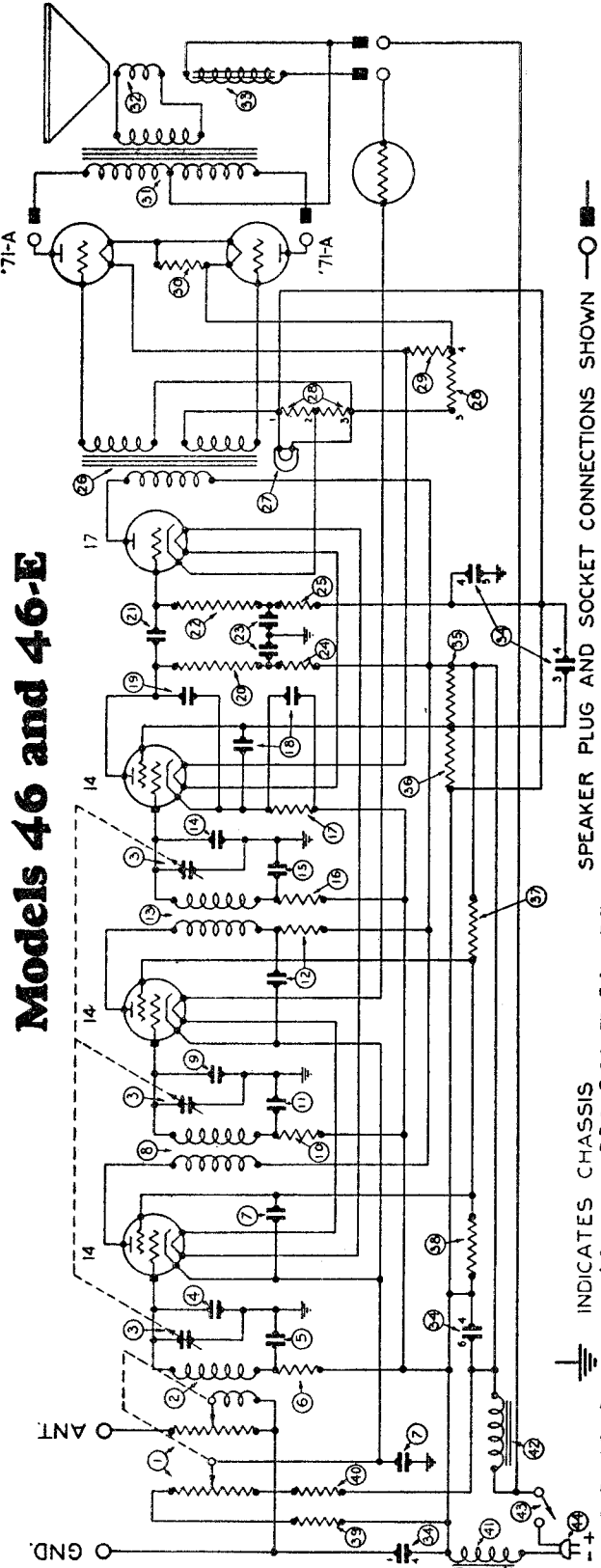
Tube Socket Readings Taken with Set Tester, DC Line, 240 Volts

Tube	Type	Circuit	Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage (Measured with Prod.)	Plate Milliamperes
14	1st R. F.		13.5	190	.4	80	3.5	5.5
14	2nd R. F.		13.5	190	.4	75	3.5	5.5
14	Detector		13.0	0	0	20	9.5	.3
17	1st Audio		12.5	60	0	...	3.0	2.5
71-A	Second Audio Push-Pull		5.5	180	53	...	...	12.0
71-A			5.5	185	53	...	...	12.0
3	Ballast		128	...	...	...	...	...

All readings taken with antenna disconnected and ground on. Volume Control on full.
 The majority of set testers are not equipped to measure a DC filament voltage as high as 14 volts. In this case the volt meter binding post prods will have to be used. This method must also be used in checking cathode voltages across resistances No. 17, No. 35, No. 28 and No. 29.
 The field coil of the Speaker used with this Receiver is of low resistance. It is not the same as the field coil used with the AC Electric Receiver. If, by mistake, a speaker from an AC Electric Receiver is plugged into the DC Receiver no damage will result.

PHILCO RADIO & TELEVISION CORP.

MODEL 46, 46-E DC
Schematic
Voltage
Condenser



INDICATES CHASSIS SPEAKER PLUG AND SOCKET CONNECTIONS SHOWN

Model 46 for operation on 110-120 Volts DC
Model 46-E for operation on 210-240 Volts DC.

Table 1—Tube Socket Readings Taken with Set Tester, DC Line, 115 Volts

Type	Circuit	Tube					
		Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage (Measured with Prod)	Plate Milliamperes
14	1st R. F.	13.5	100	1.5	60	2.5	2
14	2nd R. F.	13.5	100	1.5	60	2.5	2
14	Detector	13.5	30	1.0	25	2.5	.1
17	1st Audio	13.5	100	.25	..	4.5	5
71-A	2d Audio	4.5	90	15.5	..	..	11.5
71-A	Push-Pull	4.5	90	15.5	..	..	11.5
2	Ballast	8	..	..	..	..	..
3	Ballast	128	..	..	..	..	..

All readings taken with antenna disconnected and ground on. Volume Control on full. The majority of set testers are not equipped to measure a DC filament voltage as high as 14 volts. In this case the volt meter binding post prods will have to be used. This method will also have to be used in checking cathode voltages across resistances No. 17—No. 39 and No. 28 and No. 29. The field coil of the Speaker used with this Receiver is of low resistance. It is not the same as the field coil used with the AC Electric Receiver. If, by mistake, a speaker from an AC Electric Receiver is plugged into the DC Receiver no damage will result.

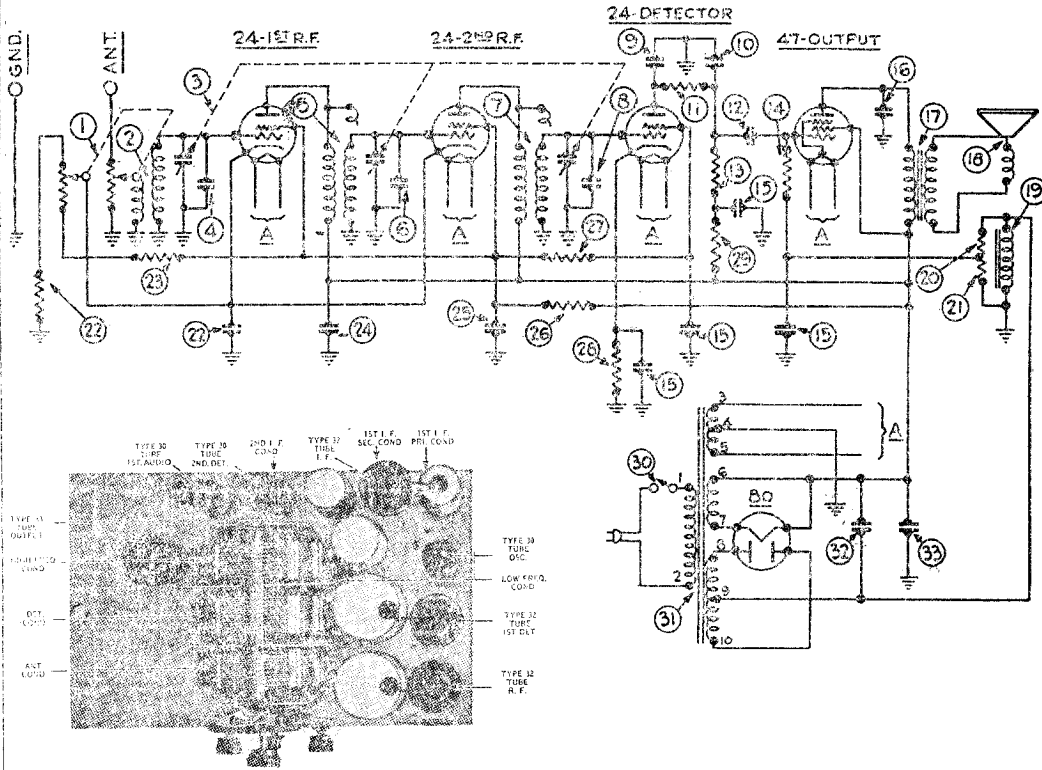
Table 2—Condenser Data
(Other than Filter Condenser)

No. on Figs. 2 and 3	Capacity MFD
16	.0005
15	.01
14	.05
13	.05 and 250-ohm resistor
12	.25
11	.25 (two sections)

MODEL 50, 50-A
Schematic
Chassis

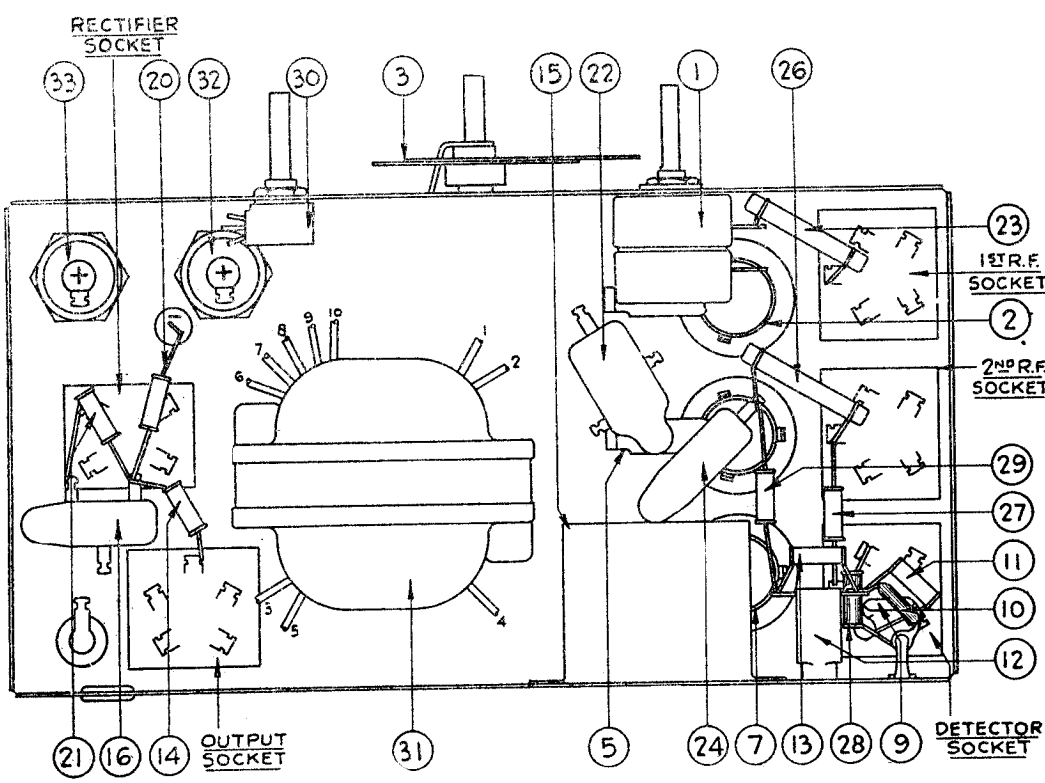
PHILCO RADIO & TELEVISION CORP.

PHILCO MODELS 50 AND 50-A



ADJUSTMENT OF MODELS 50 AND 50-A

With the volume control advanced to maximum, and using a weak oscillator signal, tune the receiver sharply to the oscillator note.
Adjust the third R. F. compensating condenser by means of the Philco fibre wrench, part 3164, for maximum output signal. If an output meter is being used, adjust for maximum reading.
Next adjust the second R. F. compensating condenser and finally the first. In each case, always adjust for maximum signal or reading.



Adjustment of the compensating condensers in the model 50 should be done with the aid of a good oscillator for the R. F. signal. The oscillator lead should be connected to the "ANT" terminal of the receiver. A good ground connection must be made from the receiver to the grounded side of the oscillator and to a water or radiator pipe.
Either the ear method or an output meter, connected across the speaker voice coil terminals can be used while adjusting.
When the Receiver is set up for operation, adjust the oscillator signal to a frequency which is approximately 1400 kilocycles.

PHILCO RADIO & TELEVISION CORP.

MODEL 50,50-A
Voltage
Resistor Data
Condenser Data

Models 50 and 50-A Receivers

Model 50 Receivers are for operation on 100-130 volt, 50-60 cycle AC lines
Model 50-A Receivers are for operation on 100-130 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	Plate Milli-amperes
Type	Circuit						
24	1st R.F.	2.4	245	90	2.5	3.0	4.5
24	2nd R.F.	2.4	250	90	2.5	3.0	5.5
24	Det.	2.4	100	42	8.0	8.0	0
47	Output	2.4	175*	190*	1.0*	...	2.7*
80	Rect.	5.0	...	...	...	...	30/

Note—Volume Control on full; Station Selector turned to Low Frequency End.

*These readings must be taken from the underside of the chassis, using test prods and leads unless the set checker is specially equipped for testing pentode tubes.

Table 2—Power Transformer Voltages

Terminals	A.C. Volts		Color
1-2	105 to 125	Primary	Black (Small Gauge)
3-5	2.5	Filament of 24 and 47	Black
6-7	5.	Filament of 80	Light Blue
8-10	700.	Plates of 80	Yellow
4	.....	Center Tap of 3-5	Black, Yellow Tracer
9	.....	Center Tap of 8-10	Yellow, Green Tracer

Table 3—Condenser Data

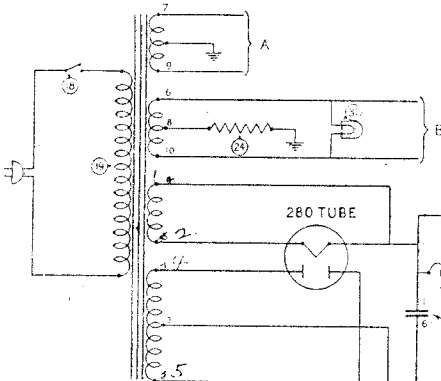
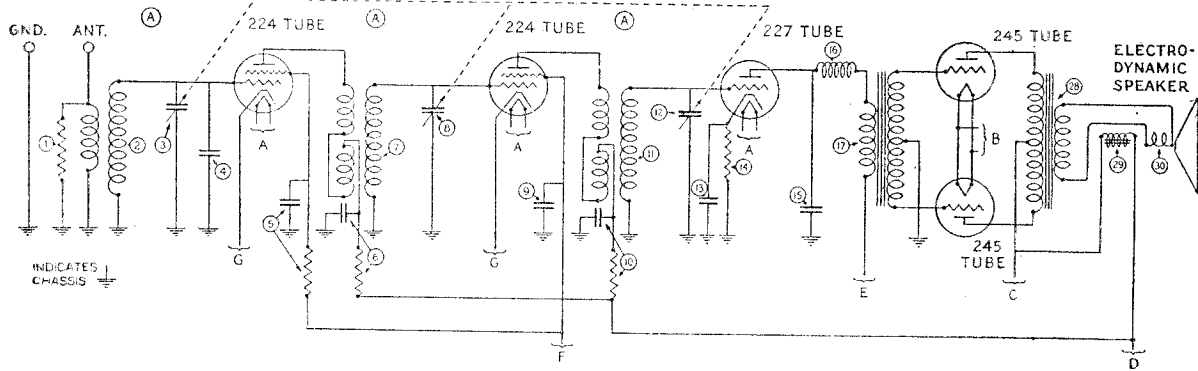
No. on Figs. 2 and 3	Capacity MFD	Container
9	.00025	Yellow
10	.01	Black Bakelite Container
12	.05	Black Bakelite Container
18	.05 and 150 Ohm resistor	Black Bakelite Container
25	.1, .15, .25, 2-5 (50-60 cycles)	Metal Container
22	.05, .15, .25, 2-5 (25-40 cycles)	
19	.05	
24	(50 to 60 cycles) 6.	Electrolytic
33	(25 to 40 cycles) 10.	Electrolytic
34	6.	Electrolytic

Table 4—Resistor Data

No. on Figs. 3 and 4	Power (Watts)	Resistance	Color		
			Body	Tip	Dot
22	...	150 and .05 Mfd.	Black	Bakelite Container	
11	.5	10,000	Brown	Black	Orange
20	1.	15,000	Brown	Green	Orange
26	1.	25,000	Red	Green	Orange
28	.5	32,000	Orange	Red	Orange
27	.5	99,000	White	White	Orange
21	.5	160,000	Brown	Blue	Yellow
13	.5	240,000	Red	Yellow	Yellow
14	.5	490,000	Yellow	White	Yellow

MODEL 65

PHILCO RADIO & TELEVISION CORP.



(A) These stages are shielded from each other. The shields are not indicated in this schematic.

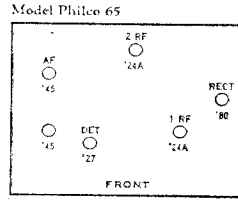


Table 8
Tube Socket Readings

TYPE TUBE	"A" VOLTS	"B" VOLTS	"B" VOLTS (SCREEN GRID)	"C" VOLTS (CONTROL GRID)	MA PLATE	CATHODE
224	2.5	150	*.2 to .75	1.5	1.5	+1.5
227	2.5	250	.....	28	1.8 to 3.5	+28
245	2.5	250	.....	50	32	.....
280	5.0	350-V. A.C.	.....	.....	55	.....

*The voltage varies from 75 volts with the volume control turned for full volume to .2 volts with the control turned for minimum volume.

†When there is no signal being reproduced the detector plate current will be about .8 M.A. Strong signals will cause a rise in current to 3.5 M.A.

Table 9
Power Transformer Voltage [AC]

TERMINALS	A.C. VOLTS	SECONDARY
1-2	700	A.C. Supply to Plates of Rectifier Tube
3	5.0	Center Tap of Rectifier Plate Secondary
4-5	2.5	Rectifier Filament
6-10	2.5	Filament 245 Tubes
8	2.5	Center Tap of 245 Tube Secondary
7-9	2.5	Heater 224 and 227 Tubes

Circuit lead - Center Tap for Secondary 7-9
Current Consumption - 125 V. A.C. - 95 Watts

Table 10
D. C. Voltage Across Filter Condenser Block

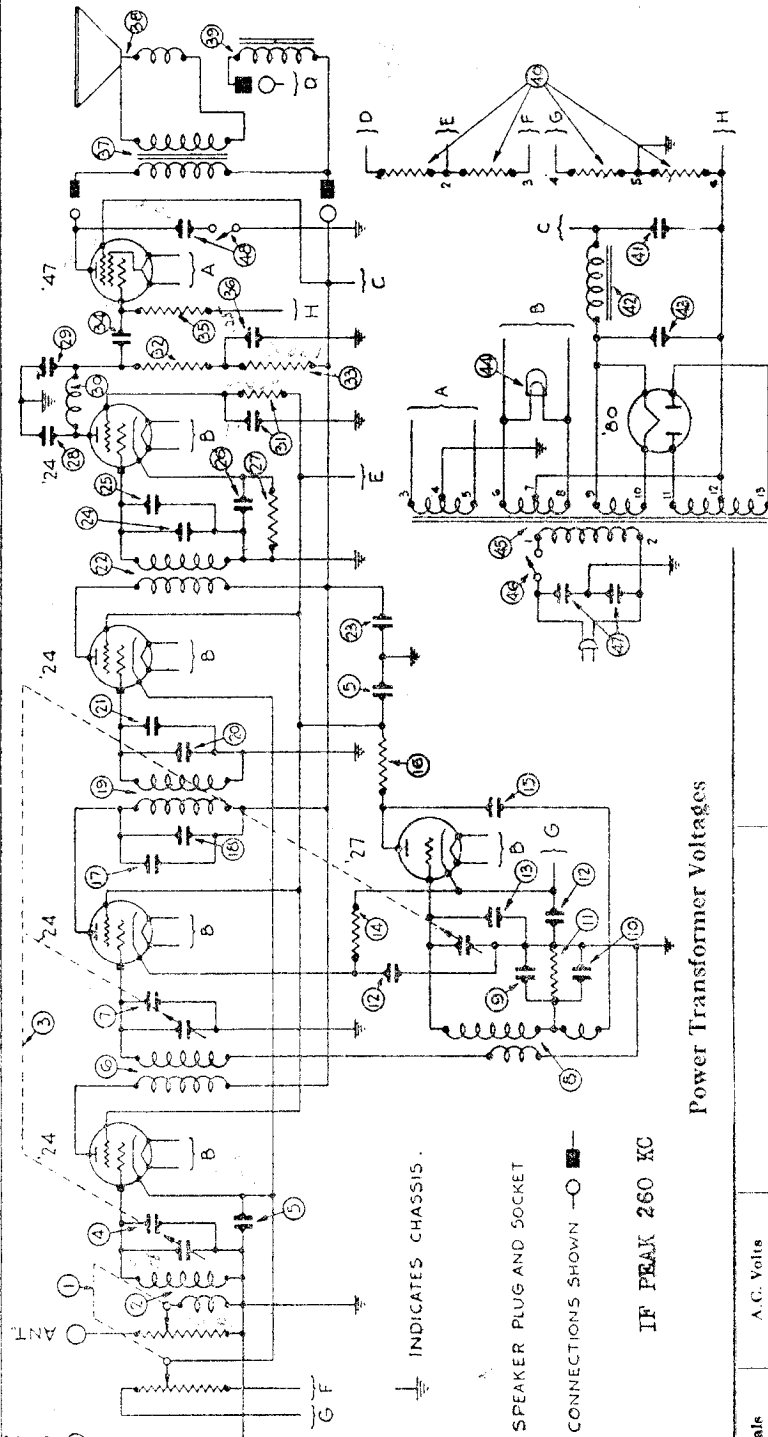
TERMINALS	D.C. VOLTS	CAPACITY	CIRCUIT
1-6	325	2.0 Mfd.	First Filter Section, Ground to 280 Filament
2-5	20	.15 Mfd.	Parallel with First Choke Coil
3	.....	.....	Blank Terminal for Detector Plate Resistor
4-6	280	1.0 Mfd.	Last Filter Section, Gnd. to Det. Plate Lead
5-6	305	2.0 Mfd.	2d Filter Section, Gnd. to End of First Choke

Table 11
Voltage Across Resistors

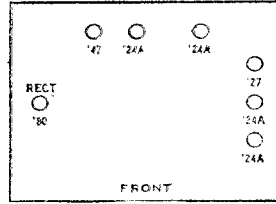
RESISTOR NUMBER	RESISTOR TERMINAL	VOLTAGE DROP	CIRCUIT
(2)	1-2	45-50	Grid Bias for the 245 Tubes
(2)	3-4	75-80	Reduces B Voltage for the Screen Grid
(1)	1-2	4-10	Detector Plate Voltage
(1)	1-2	28	Detector Grid Bias
Field Coil of Speaker		135-140	Supplies Field Energy of Dynamic Speaker

PHILCO RADIO & TELEVISION CORP.

MODEL 70, 70-A
Below B-22,000
Voltage
Schematic
MODEL 570
Grandfather Clock



Models 70, 70A, 70E, 270, 270A



MODEL 570 Grandfathers Clock
contains the same radio
equipment as Model 70

Power Transformer Voltages

Terminals	A. C. Volts	Color
1-2	105 to 125	Black (Small Gauge)
3-5	2.5	Dark Green
6-8	2.5	Black (Heavy Gauge)
9-10	5	Light Blue
11-13	700	Yellow
4	.....	Black, Green Tracer
7	.....	Black, Yellow Tracer
12	.....	Yellow, Green Tracer

Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube Type	Circuit	Voltage				Plate Milli-amperes
		Filament	Plate	Screen Grid	Control Grid	
24	1st R. F.	2.25	250	85	3	3
24	1st Det.	2.25	250	87	3.5	.5
27	Osc.	2.25	.85	85	2	2.5
24	1st I. F.	2.25	250	87	3	3
24	2nd Det.	2.25	105	75	6	.1
47	Audio	2.25	245	255	1	.....
80	Rectifier	4.7	.....	.....	.....	40/plate

Note—Volume Control Off; Station Selector turned to Low Frequency End.

If electrolysis occurs on the insulation of the wire between the filter choke and the electrolytic condenser, unsolder the wire and cover with spaghetti.

INDICATES CHASSIS.

SPEAKER PLUG AND SOCKET

CONNECTIONS SHOWN — O —

IF PEAK 260 KC

MODEL 70,70-A
 Chassis- Data
 MODEL 570
 Grandfather Clock

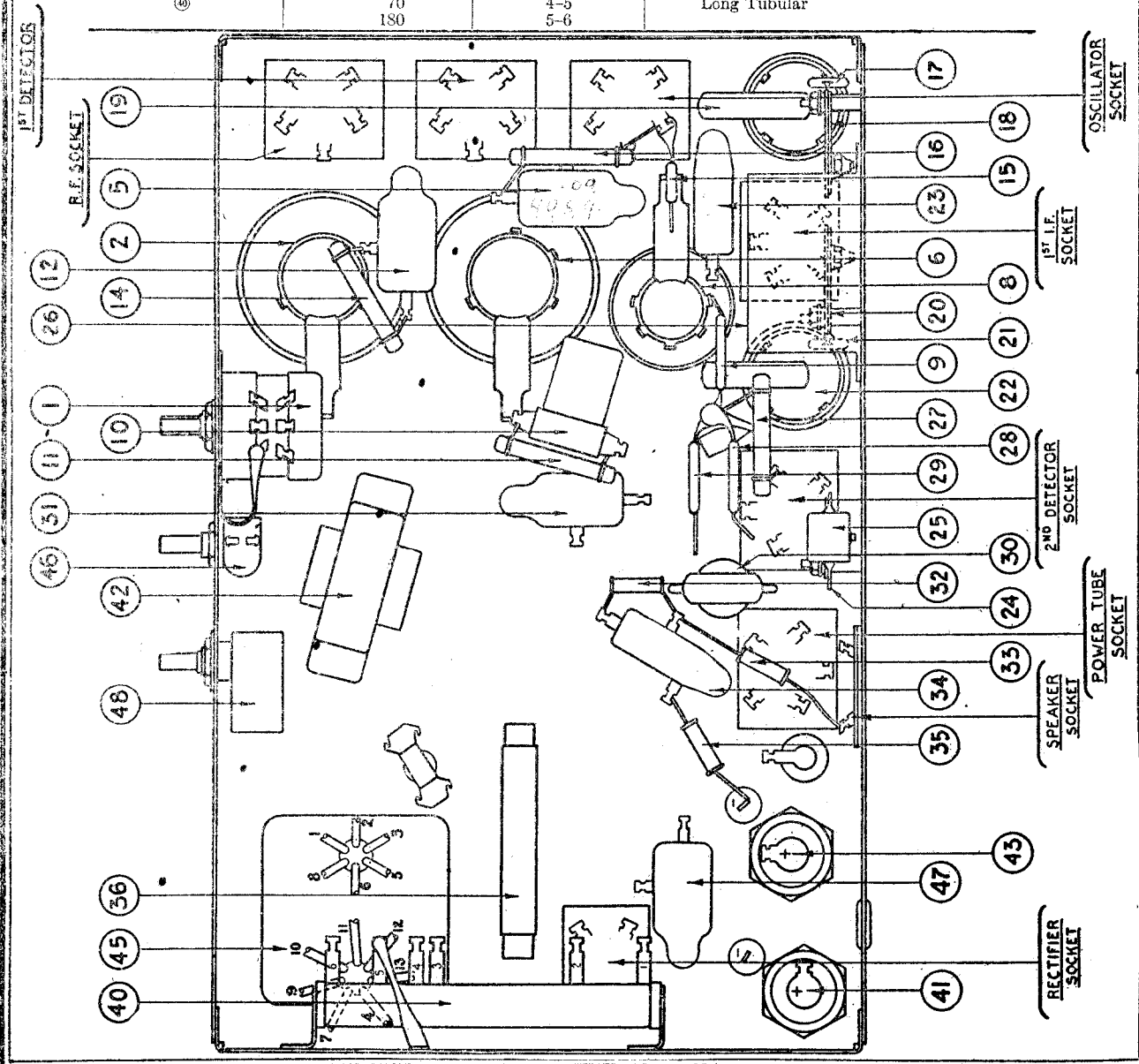
PHILCO RADIO & TELEVISION CORP.

No. on Figs. 3 and 4	Capacity MFD	Color
15	.09	Yellow Orange
16	.00041	Blue, Golden Yellow
17	.09	Light Blue, White
18	.00011	Green
19	.05	Yellow
20	.00005	
21	.5	
22	.0005	
23	.00025	
24	.09 and 250 Ohm Resistor	
25	.01	
26	.25	
27	(25 to 40 cycles) 10.	
28	(50 to 60 cycles) 6.	
29	6.	

Condenser Data

No. on Figs. 3 and 4	Resistance	Terminal	Body	Color Tip	Dot
11	50,000	...	Green	Brown	Orange
12	5,000	...	Green	Black	Red
13	13,000	...	Brown	Orange	Orange
14	250,000	...	Red	Yellow	Yellow
15	100,000	...	White	White	Orange
16	1,060	1-2			
17	2,300	2-3			
18	70	4-5			
19	180	5-6			

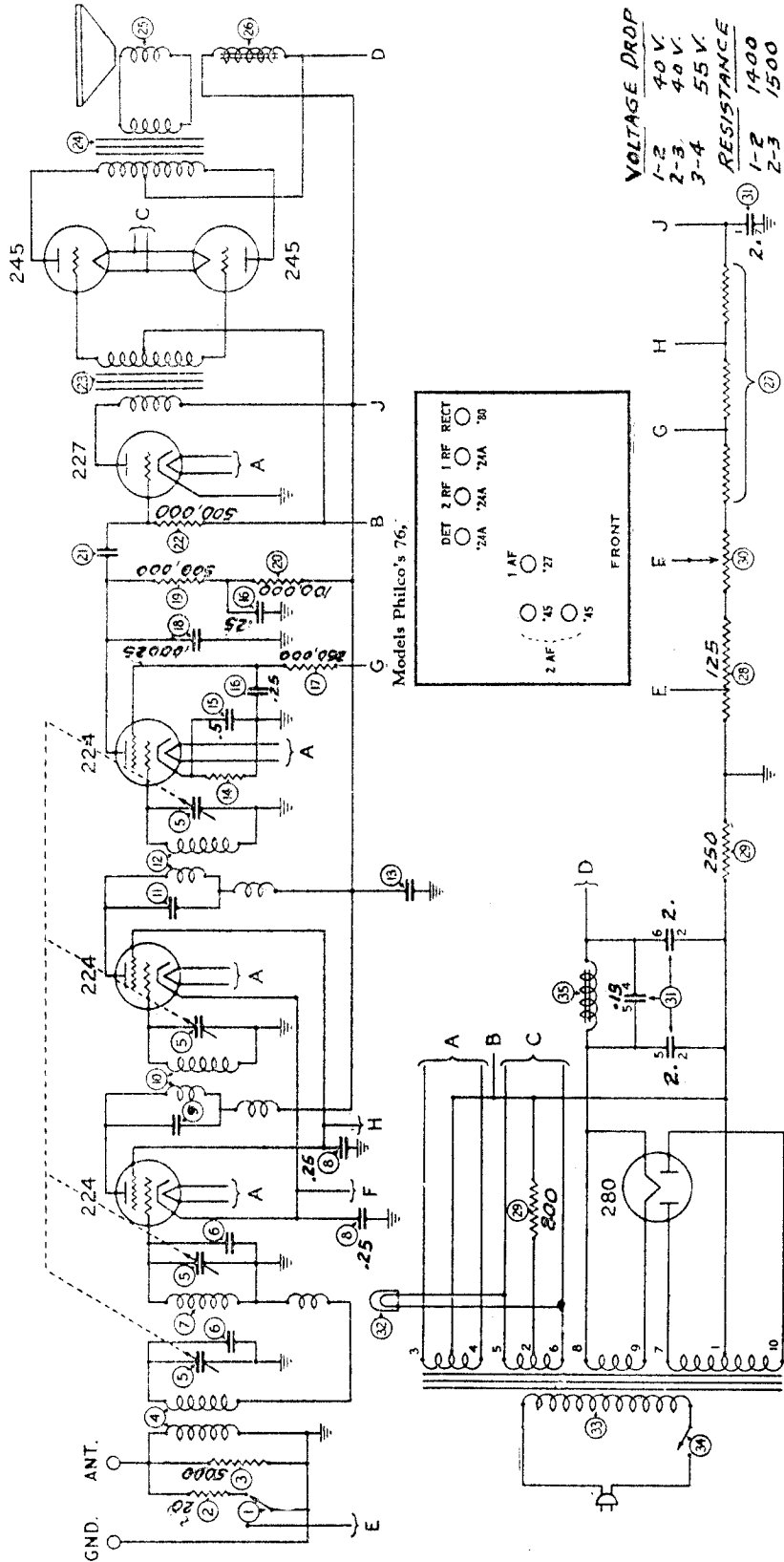
Resistor Data



PHILCO RADIO & TELEVISION CORP.

MODEL 76

Philco Model 76

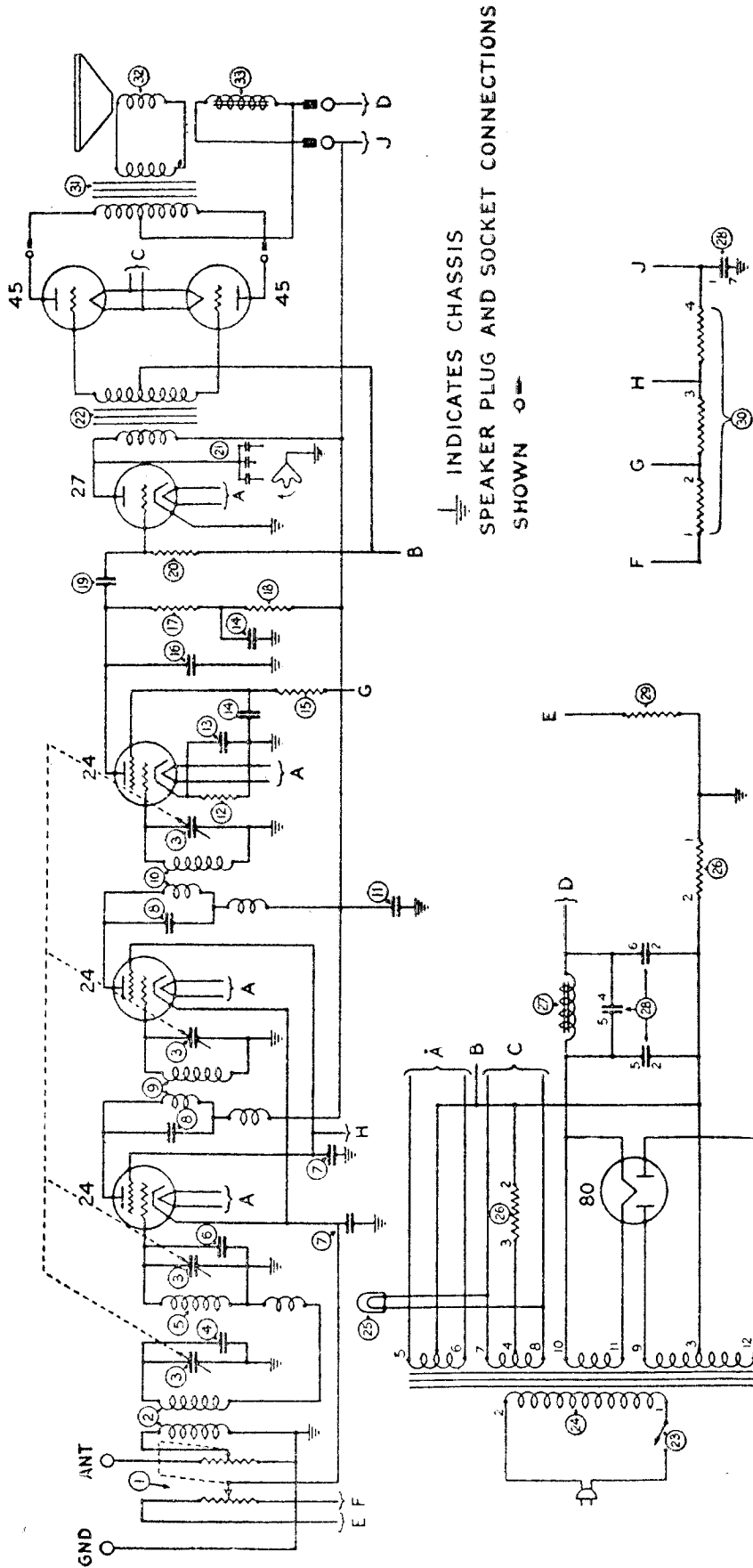


Model 76.

Tube Type	Location	Volts	Volts	Volts	Gr. Volts	Volts	Cathode	Plates
24	1 R.F.	2.3	145	90	3.	13.	3.5	
24	2 R.F.	2.3	145	90	3.	13.	3.5	
24	Det.	2.3	36	30	1.4	12.	0.	
27	1 A.F.	2.3	140		1.	10.	3.	
45	2 A.F.	2.2	230		46.		30	
45	2 A.F.	2.2	230		46.		30	
80	Rect.	4.5						50

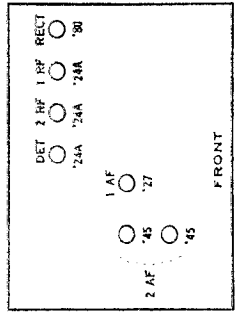
Power Transformer Voltages

TERMINALS	A.C. VOLTS	SECONDARY
1		Center Tap for 280 Plate
2	2.67	Center Tap for 245 Tubes
3-4	2.68	Heaters of 224 and 227 Tubes
5-6	5.00	Filaments of 245 Tubes
8-9	7.50	Filament of 280 Tube
7-10		Plate of 280 Tube
Red Wire		Center Tap for 224 and 227 Tubes
Red Wire		Primary
Red Wire		Primary } Through panel together



INDICATES CHASSIS
SPEAKER PLUG AND SOCKET CONNECTIONS
SHOWN

Models Philco's 76, 77, 77A



COMPENSATING

Always use an oscillator signal when adjusting compensating condensers. With the Receiver set up for operation, adjust the oscillator and Receiver so the signal is turned in between 120 and 140 on the tuning scale. Have the Receiver volume control turned on full. Adjust the oscillator so that the received signal is very weak. Using a fibre wrench turn down on the adjusting nut of the first compensating condenser until it is quite tight. This purposely throws the first stage out of balance while adjusting the second stage.

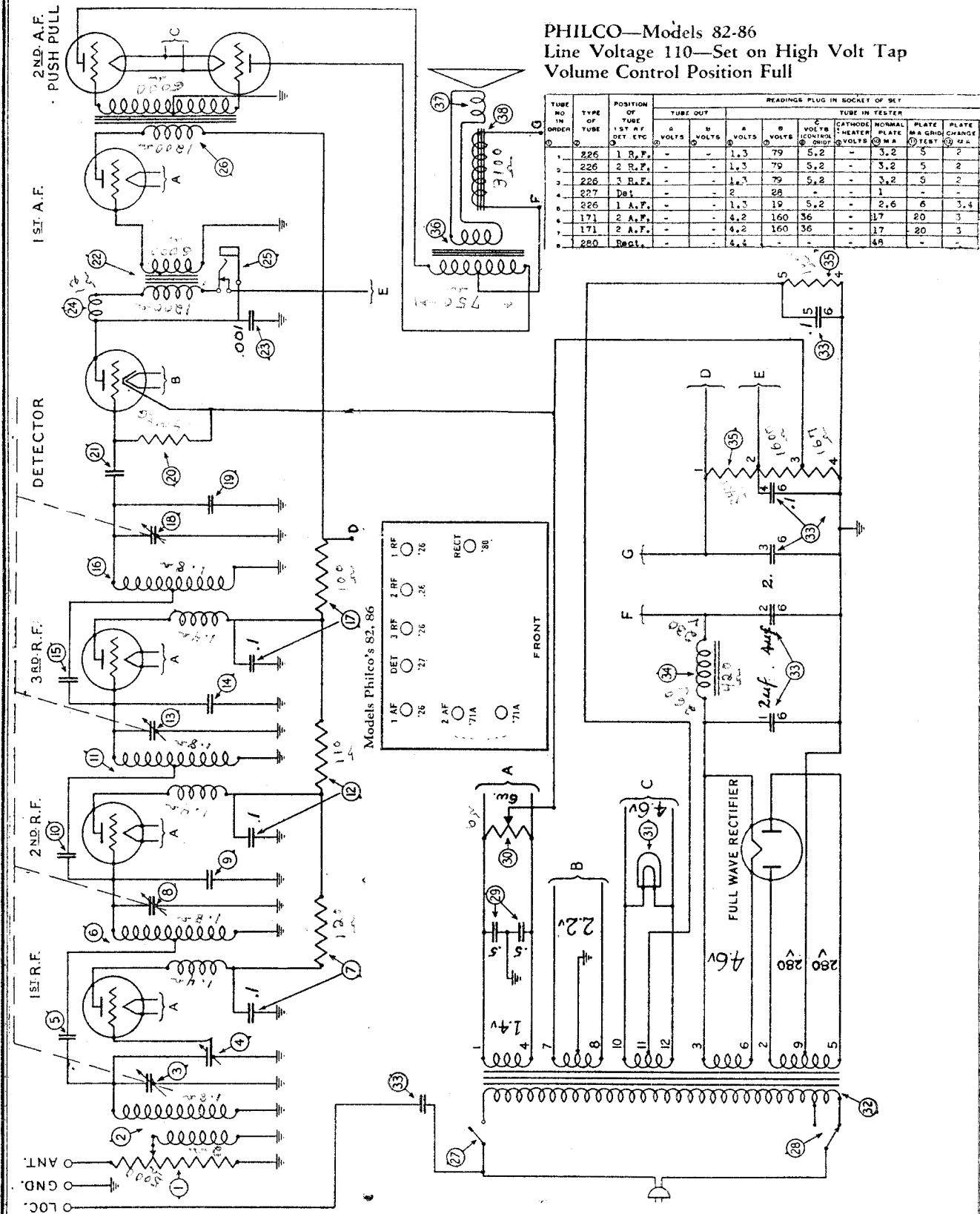
After tightening this first adjusting nut compensate the second condenser in the usual manner, that is, tune the Receiver very carefully to the oscillator signal and adjust the compensating condenser for the maximum signal. After this adjustment has been made, adjust the first compensating condenser in the same manner.

PHILCO RADIO & TELEVISION CORP.

MODEL 82,86

PHILCO—Models 82-86
Line Voltage 110—Set on High Volt Tap
Volume Control Position Full

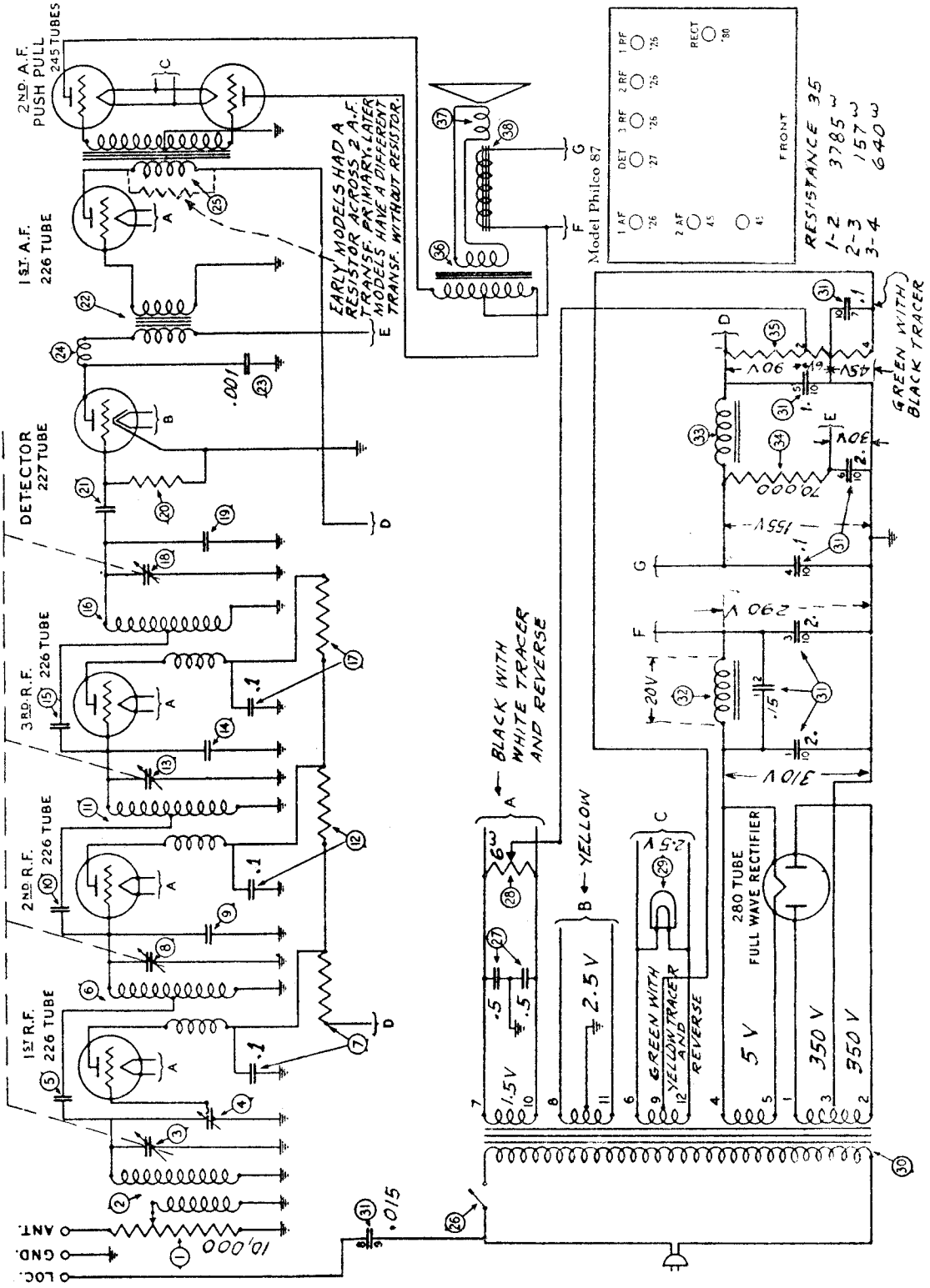
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. ETC.	READINGS PLUG IN SOCKET OF SET					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONTROL GRID)	CATHODE HEATER VOLTS	NORMAL PLATE MA	PLATE MA GRID CHANGE	PLATE CHANGE 100 Hz.
1	226	1 R.F.	-	-	1.3	79	5.2	-	3.2	5	2
2	226	2 R.F.	-	-	1.3	79	5.2	-	3.2	5	2
3	226	3 R.F.	-	-	1.3	79	5.2	-	3.2	5	2
4	227	Det.	-	-	2	25	-	-	1	-	-
5	226	1 A.F.	-	-	1.3	19	5.2	-	2.6	6	3.4
6	171	2 A.F.	-	-	4.2	160	36	-	17	20	3
7	171	2 A.F.	-	-	4.2	160	36	-	17	20	3
8	220	Rect.	-	-	4.4	-	-	-	4.8	-	-



PHILCO RADIO & TELEVISION CORP.

MODEL 87
Schematic
Socket

Philco Model 87



EARLY MODELS HAD A RESISTOR ACROSS 2 A.F. TRANSF. PRIMARY. LATER MODELS HAVE A DIFFERENT TRANSF. WITHOUT RESISTOR.

BLACK WITH WHITE TRACER AND REVERSE

2.5 V YELLOW

GREEN WITH YELLOW TRACER AND REVERSE

280 TUBE FULL WAVE RECTIFIER

5 V

350 V

350 V

1 AF	'26	2 AF	'45		'41
DET	'27				
1 RF	'25	2 RF	'25		'25

RESISTANCE 35
1-2 3785 Ω
2-3 157 Ω
3-4 640 Ω

GREEN WITH BLACK TRACER

PHILCO RADIO & TELEVISION CORP.

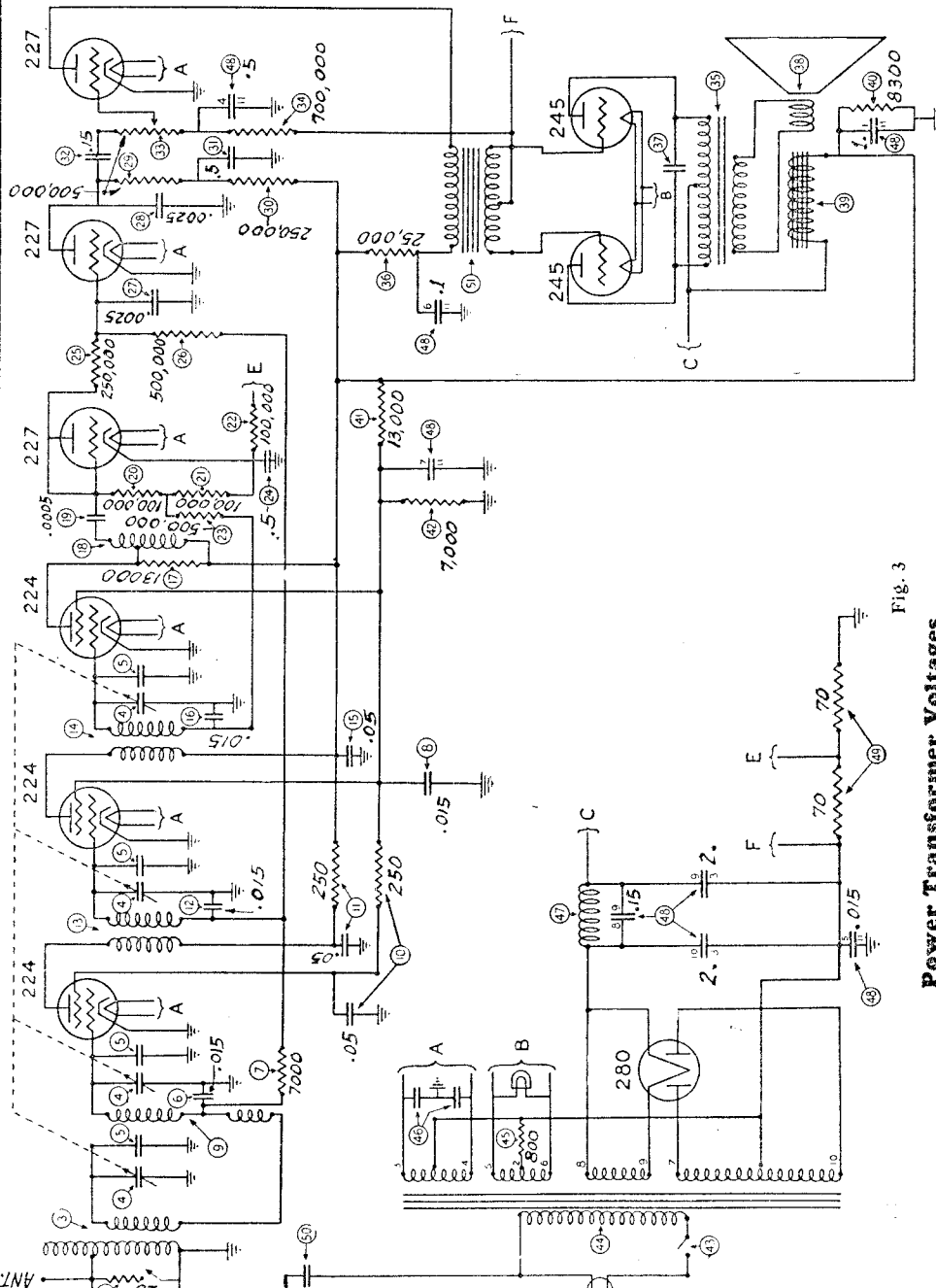


Fig. 3

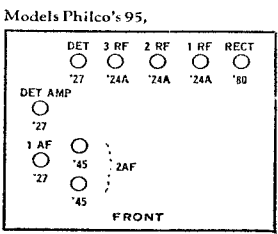
Power Transformer Voltages

TERMINALS	A.C. VOLTS	SECONDARY
3-4	2.67	Heaters of 224 and 227 Tubes
5-6	2.68	Filaments of 245 Tubes
2	5.00	Center Tap for 245 Tubes
8-9	5.00	Filament of 280 Tube
7-10	7.50	Plate of 280 Tube
1		Center Tap for 280 Tube
		Center Tap for 224 and 227 Tubes
		Primary
		Primary

Voltages Read with A.C. Set Tester. A.C. Line 115 Volts.

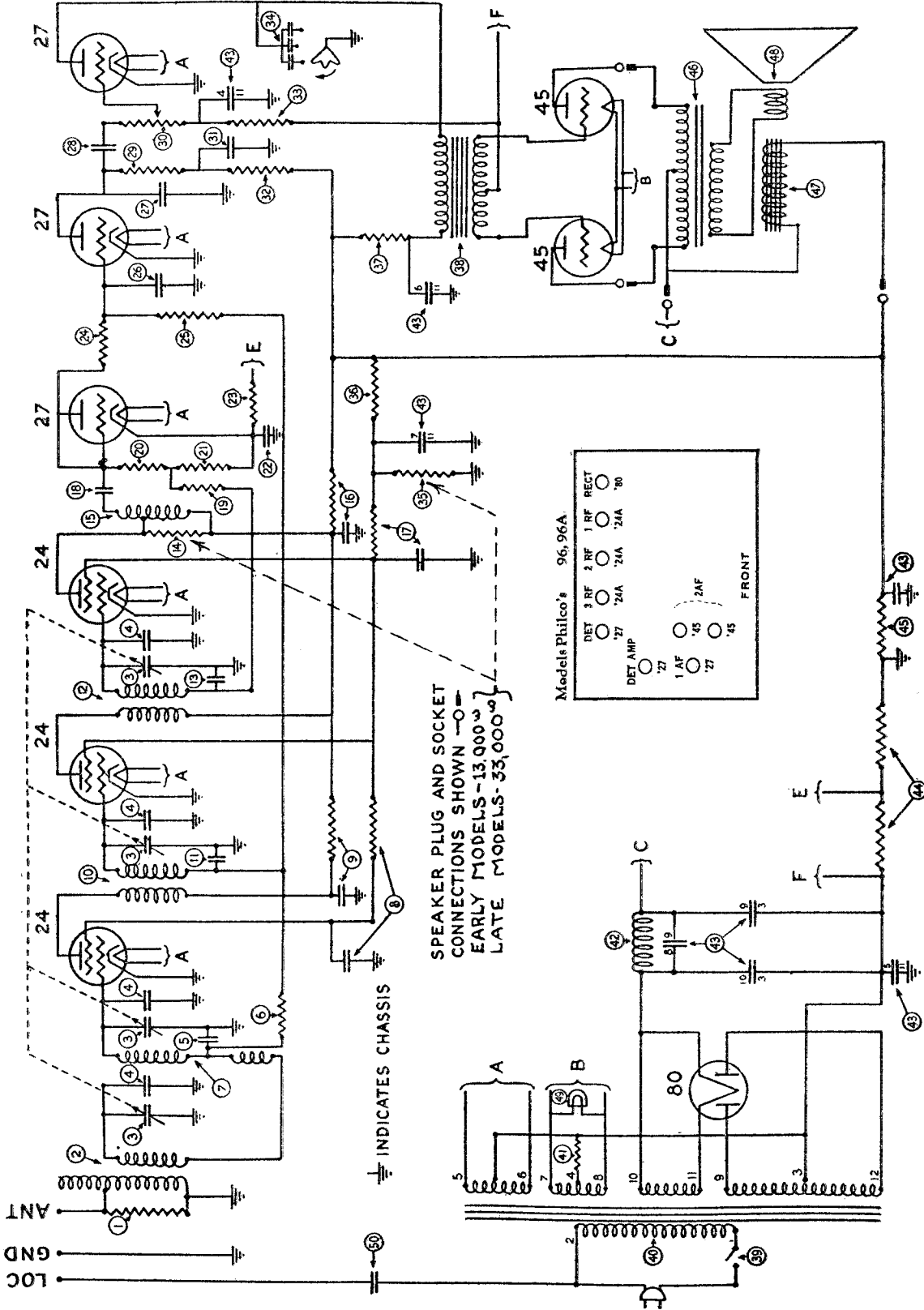
TUBE	TYPE	CIRCUIT	FILAMENT VOLTS	PLATE VOLTS	SCREEN GRID VOLTS	CONTROL GRID VOLTS	CATHODE VOLTS	PLATE MILLI-AMPERES
	280	Rectifier	4.5					43/Plate
	224	1st R. F.	2.15	155	95	0	5.3	4
	224	2d R. F.	2.15	155	95	0	5.3	4
	224	3d R. F.	2.15	155	95	0	5.3	4
	227	Det.	2.15	0		-.5	.7	0
	227	Det. Amp.	2.15	27		-.5	5.5	0
	227	1st A. F.	2.15	85		-2.0*	5.5	2.5
	245	2d A. F.	2.2	250				28
	245	2d A. F.	2.2	250				28

*This is read with Volume Control off. With it on the reading will be .2 volt.



PHILCO RADIO & TELEVISION CORP.

MODEL 96, 96-A
Schematic



PHILCO RADIO & TELEVISION CORP.

MODEL 112, 112-A
Below 174,001
Voltage
Electrical Values

Models 112 and 112-A Receivers

Model 112 Receivers are for operation on 100-130 volt, 50-60 cycle AC lines
Model 112-A Receivers are for operation on 100-130 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube		Filament Volts	Plate Volts	Screen Grid Volts*	Control Grid Volts	Cathode Volts	Plate Milli-Amperes	Screen-Grid Milli-Amperes †
Type	Circuit							
24	1st R. F.	2.1	190	60	.2	5	1.7	1.75
27	Osc.	2.1	45	..	.7	7	1.6	....
24	1st Det.	2.1	180	62	4.6	8	.5†	.15
24	1st I. F.	2.1	185	65	...	5	1.5	1.7
24	2nd I. F.	2.1	190	82	2.2	5	3	1.85
27	Det. Rect.	2.2	...	..	.4	.5	....	....
27	Det. Amp.	2.2	35	..	.4	5	.20†	....
27	1st A. F.	2.1	95	..	1.2	5	4.	....
45	2nd A. F.	2.2	255	..	50	...	32.5	....
45	2nd A. F.	2.2	255	..	50	...	32.5	....
80	Rect.	4.9	...	..	...	...	50/Plate	....

*Read with C 100 Scale.
†Read with 20 Mil. Scale.
‡Read with 2 Mil. Scale.

Note—Volume Control Off; Station Selector turned to Low Frequency End; Range Switch set in "Normal" Position.

Table 2—Power Transformer Voltages

Terminals	A.C. Volts	
1—2		Primary Center Tap 80 Tube Center Tap 45 Tubes Heaters for 24 and 27 Tubes Filaments for 45 Tubes Plates 80 Tube Filament 80 Tube Center Tap for 24 and 27 Tubes
3		
4		
5—6	2.67	
7—8	2.68	
9—12	750.	
10—11	5.0	
Rubber Covered Lead		

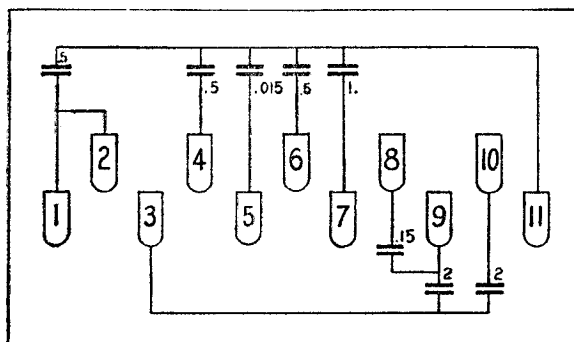
Table 3—Condenser Data
(Other Than Filter Condenser)

No. on Figs.	CAPACITY	COLOR
⑥	.05	Bakelite Container
⑩ ⑪	.05 and 250 Ohm Resistor	Bakelite Container
⑰	.25 (two sections)	Metal Container
⑱ ⑳ ㉑ ㉒ ㉓	.00011	Blue, Golden Yellow
㉔	.0007	White, Golden Yellow
㉕	.05	Bakelite Container
㉖	.05 and 250 Ohm Resistor	Bakelite Container
㉗	.00005	Light Blue, White
㉘	.5	Metal Container
㉙	.00025	Yellow
㉚	.015	Bakelite Container
㉛	.05	Bakelite Container
㉜	.015 (two sections)	Bakelite Container
㉝	.05	Bakelite Container

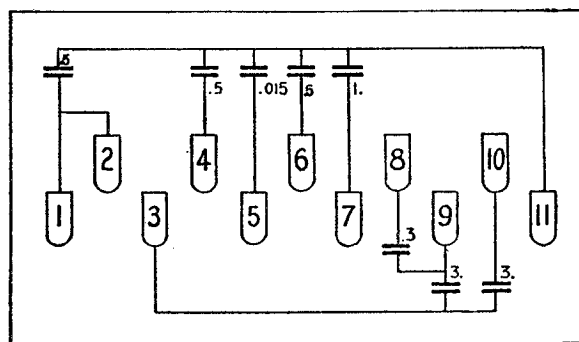
Table 4—Resistor Data

No. on Figs.	Power (Watts)	Resist-ance	COLOR		
			Body	Tip	Dot
㉞	1.	1,000	Brown	—Black	—Red
①	.5	10,000	Brown	—Black	—Orange
⑱	1.	13,000	Brown	—Orange	—Orange
㉑ ㉒	1.	25,000	Red	—Green	—Orange
⑰ ㉓ ㉔	.5	50,000	Green	—Brown	—Orange
㉕ ㉖	1.	70,000	Violet	—Black	—Orange
⑧ ㉗ ㉘ ㉙	.5	100,000	White	—White	—White
㉚	1.	250,000	Red	—Yellow	—Yellow
㉛	.5	500,000	Yellow	—White	—Yellow
㉜	1.	500,000	Yellow	—White	—Yellow
㉝		70	Flat Wire Wound (two sections)		
㉞		800	Short Tubular		
㉟		10,000	Long Tubular		

Model 112 Condenser Block Part No. 3754

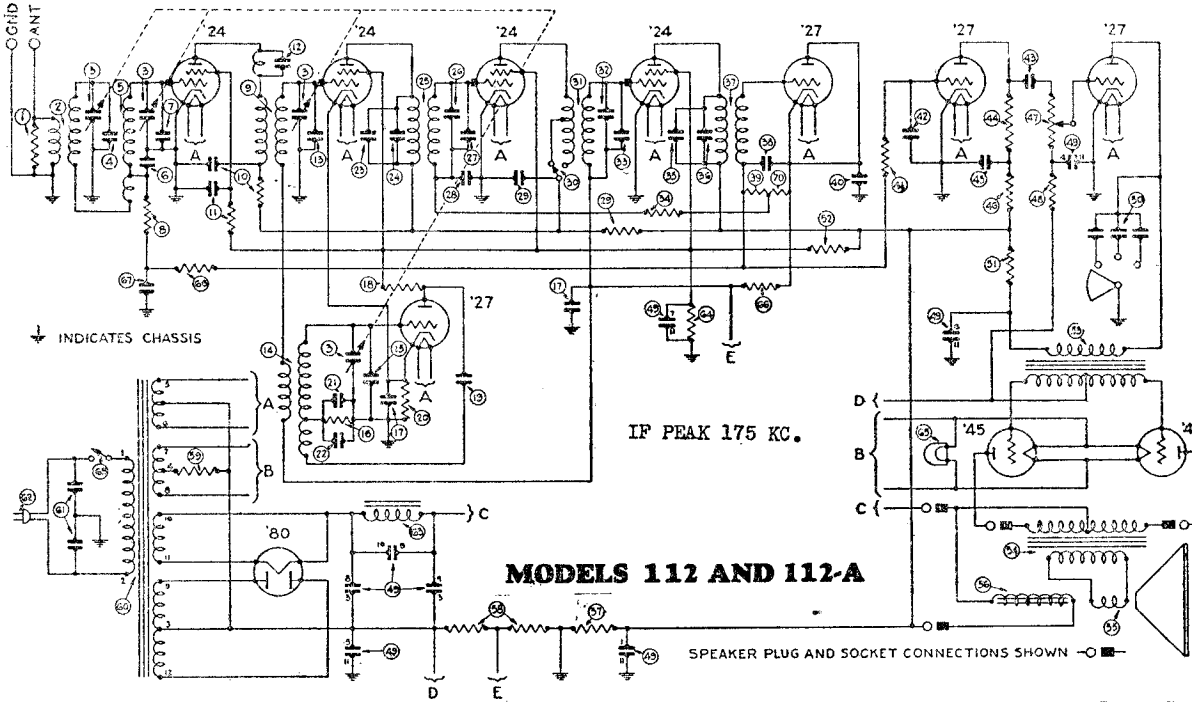


Model 112-A Condenser Block Part No. 3755



PHILCO RADIO & TELEVISION CORP.

MODEL 112,112-A
Below #174,001
MODEL 212,212-A
Schematics



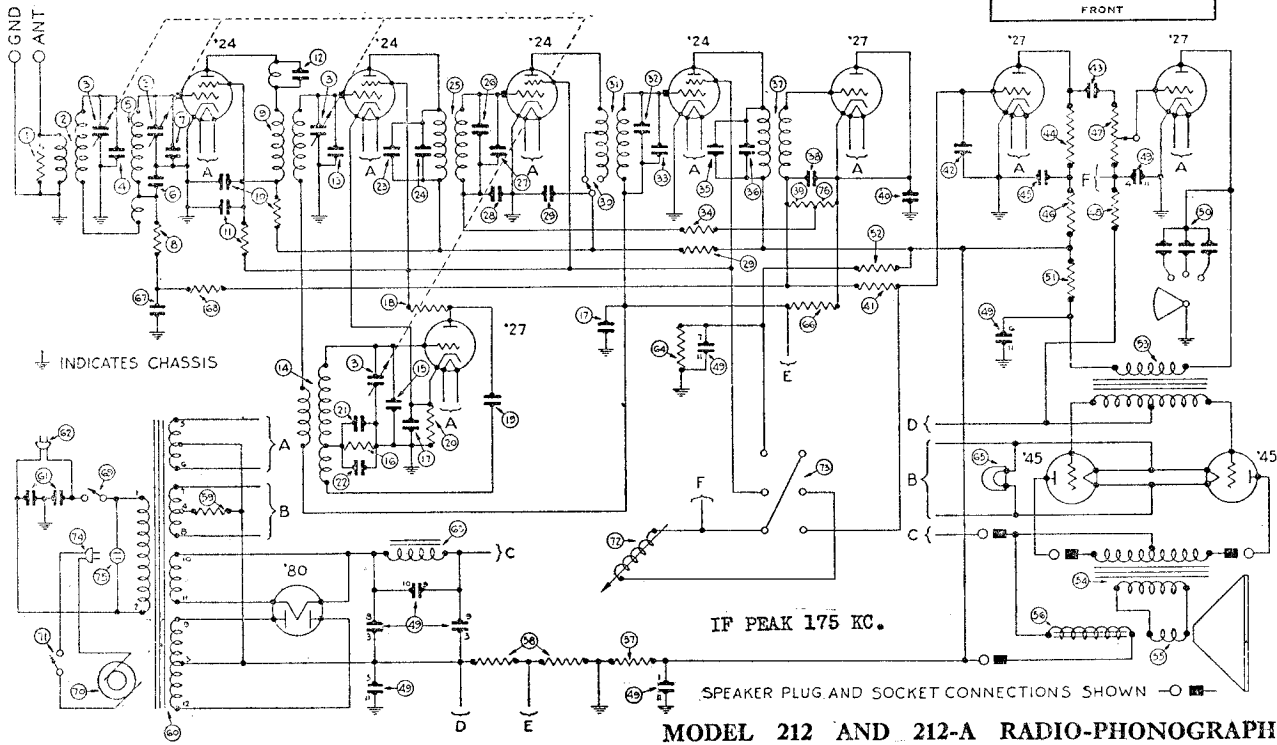
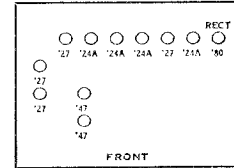
MODELS 112 AND 112-A

SPECIAL NOTE

Resistor (70) in models 112,112-A is (76) in models 212,212-A

For voltage data and other values applying to models 212,212-A, see data for models 112,112-A

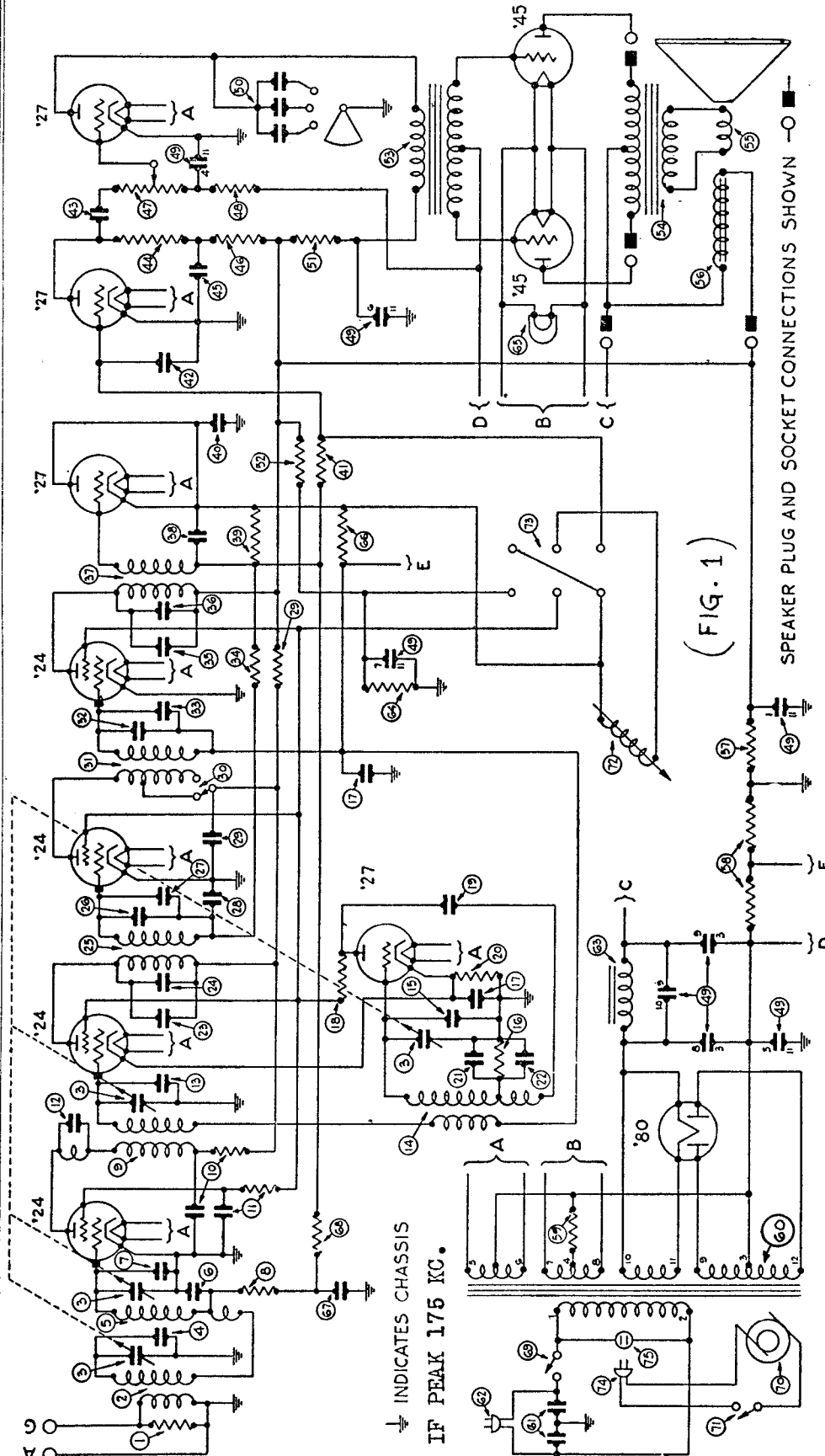
Models 112, 112-A, 112E, 212, 212E



MODEL 212 AND 212-A RADIO-PHONOGRAPH

PHILCO RADIO & TELEVISION CORP.

MODEL 211, 211-A



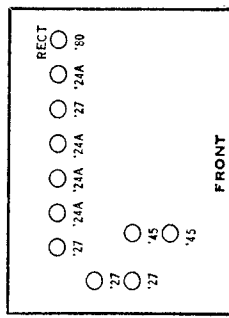
(FIG. 1)

SPEAKER PLUG AND SOCKET CONNECTIONS SHOWN — O —

NOTE:—Starting January 15th, the connection from the pick-up to the Detector Rectifier Cathode is changed so as to reach the connection between the volume control No. 47 and resistor No. 48. This change has been made by removing the green wire in the radio-phonograph switch cable from resistor No. 66, and lengthening it to reach the connection indicated at the volume control.

Voltage, resistor and condenser data furnished in connection with Models 111 and 111-A is applicable in every respect to Models 211 and 211-A.

Models 211, 211A



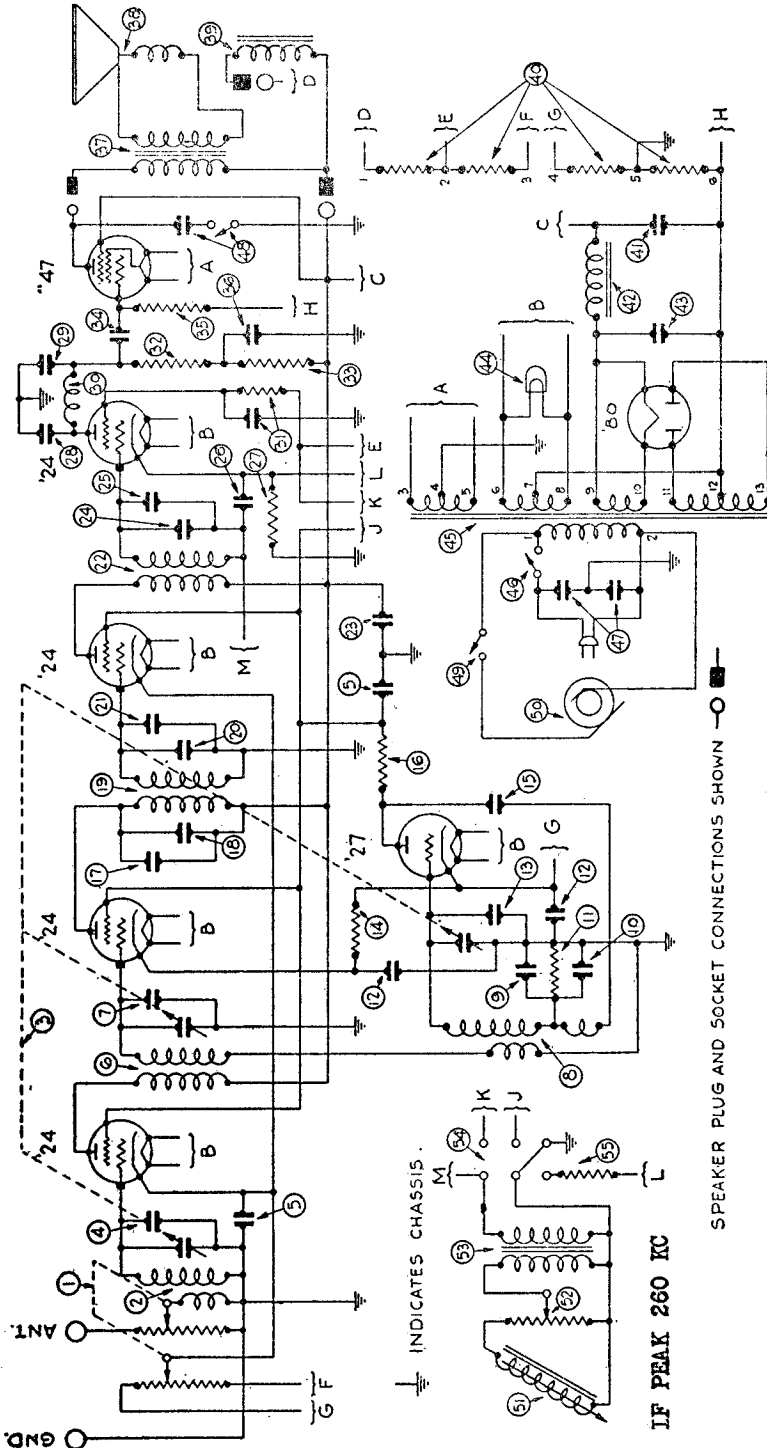
PHILCO RADIO & TELEVISION CORP.

MODEL 270, 270-A
Schematic

MODEL 270 AND 270-A RADIO-PHONOGRAPH

MODEL 70 IS FOR USE ON 50-60 CYCLE 105-125 VOLT AC LINES
MODEL 70-A IS FOR USE ON 25 CYCLE 105-125 VOLT AC LINES

The chassis of the 270 and 270-A are the same as the chassis for the 70 and 70-A except for the additional wiring to the radio-phono switch and the electric turntable and pick-up.



ADDITIONAL PARTS LIST - MODELS 270 AND 270-A

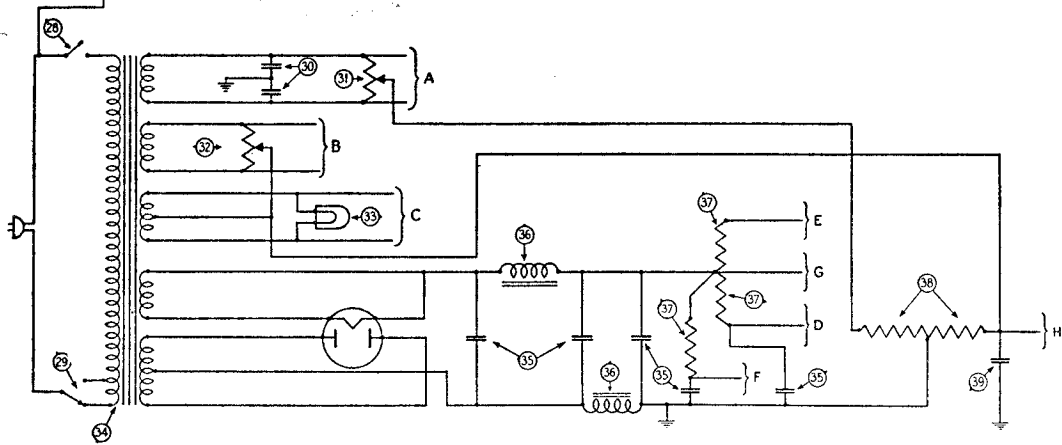
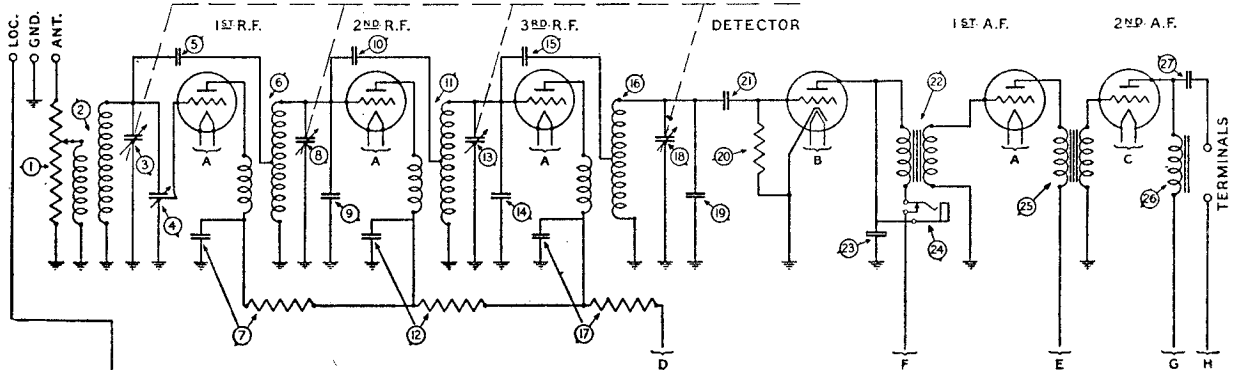
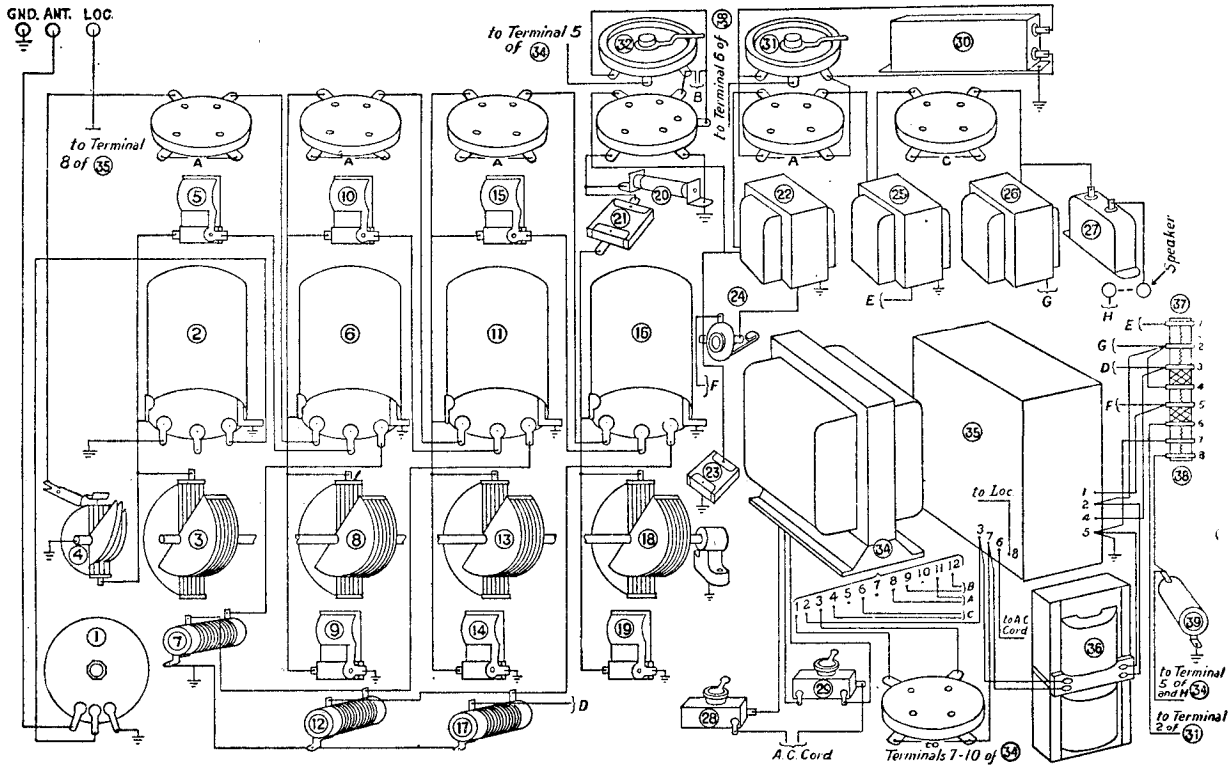
Part No.	Description
5168	Switch (for motor)
4543	Motor (50 to 60 cycle)
4561	Motor (25 cycle)
5251	Pick-Up Head
5117	Volume Control
5167	Pick-Up Coupling Transformer
5170	Phono-Radio Switch
3525	Resistor (33000 ohms)
4547	Turntable
4091	Cord Connector Plug
4124	Cord Connector Socket
4101	Needle Cup
4102	Needle Box

In case of audio howl and the shipping screws have been properly loosened, the condition cer usually be eliminated by placing a metal tube shield over the detector tube

Do not attempt repair work on the turntable motor. Should this part become defective, replace with another motor and return it to the factory. The pick-up should be handled in the same way. If it doesn't operate properly, - remove the mounting bolt which holds the pick-up head to the tone arm, - replace with another and return it to the factory. Grease the worm gear of the motor with a clear petroleum jelly or a commercially pure vaseline. In order to oil the bearings of the motor it is necessary to remove the turntable. There is an oil cup located at the top of the motor board, in which a few drops of light machine oil may be added as needed.

PHILCO RADIO & TELEVISION CORP.

MODEL 500 Series
Schematic
Chassis



MODEL 296, 296-A

PHILCO RADIO & TELEVISION CORP.

Installation Hints on Model 296 Radio-Phonograph

Cardboard packing is placed between the motor disc and the field coils to protect the disc in shipping. Be sure that this packing is removed before placing in service.

There are three causes for complaints such as "distorted," "fuzzy" or "noisy" reproduction when playing records on the Model 296.

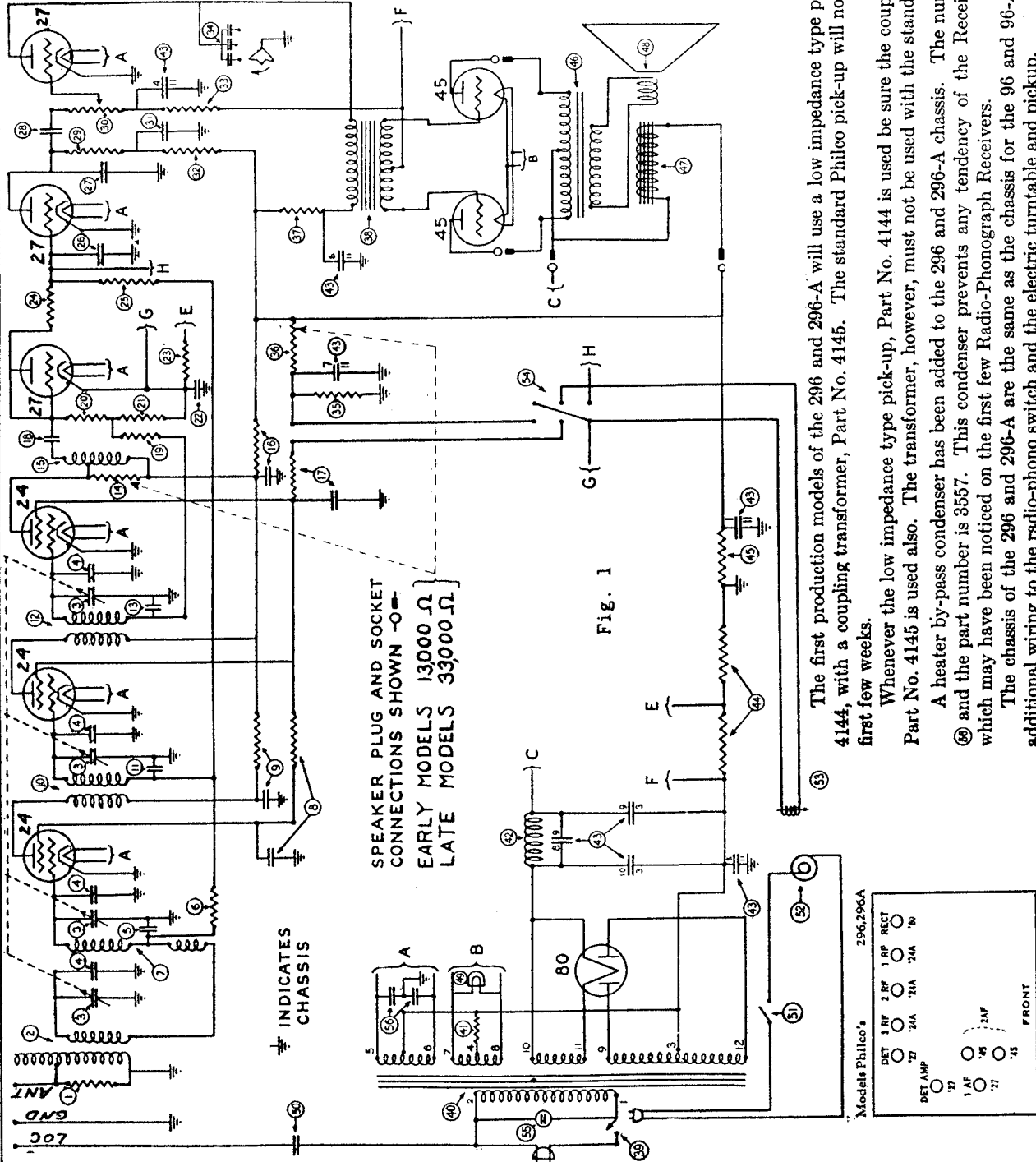
Usually the trouble is caused by the turntable motor board being in contact with the cabinet. It is absolutely necessary that the four bolts holding the motor board in place be loosened when the Model 296 is put into service. Pure gum washers are between the motor board and the cabinet, so that when the bolts are loosened the motor board is freely floating on the gum washers.

The first production models of the 296 and 296-A will use a low impedance type pick-up, Part No. 4144, with a coupling transformer, Part No. 4145. The standard Philco pick-up will not be used for the first few weeks.

Whenever the low impedance type pick-up, Part No. 4144 is used be sure the coupling transformer Part No. 4145 is used also. The transformer, however, must not be used with the standard pick-up.

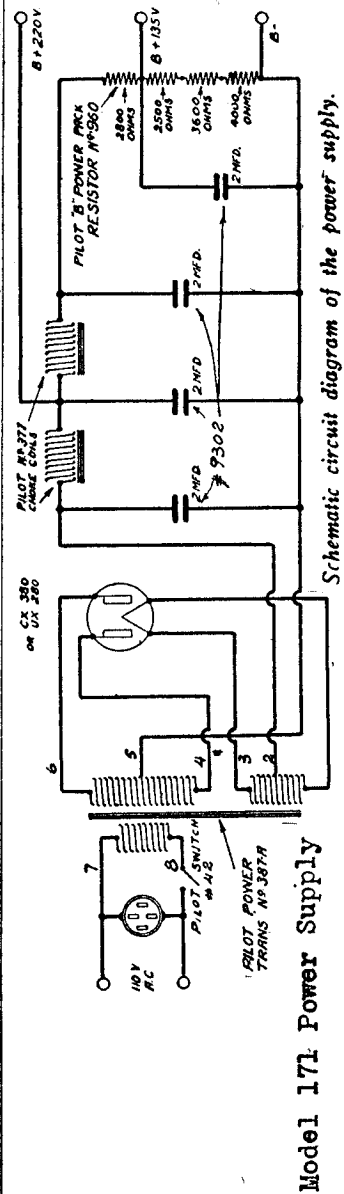
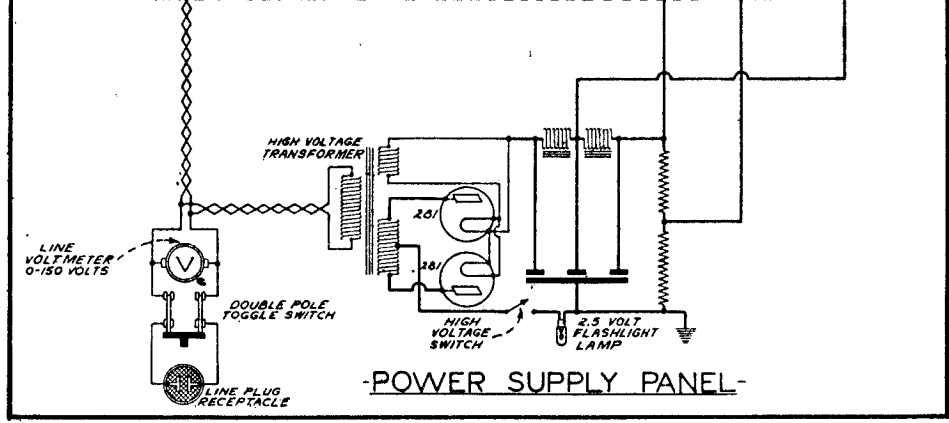
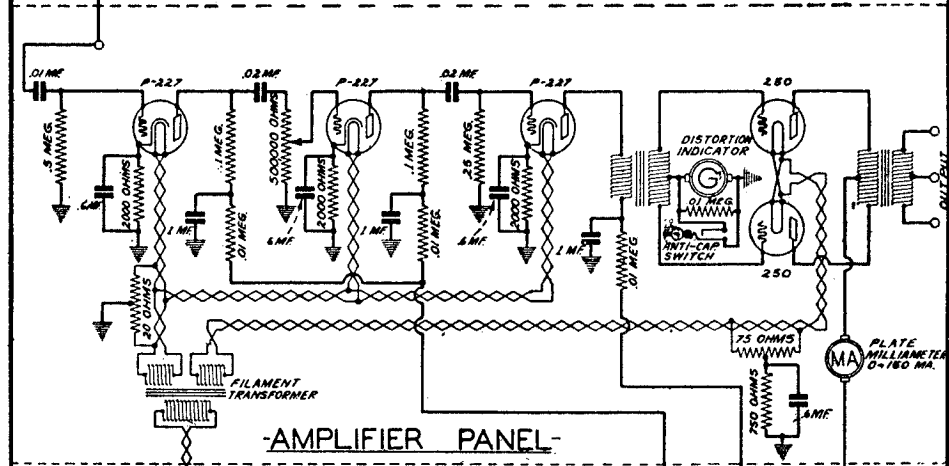
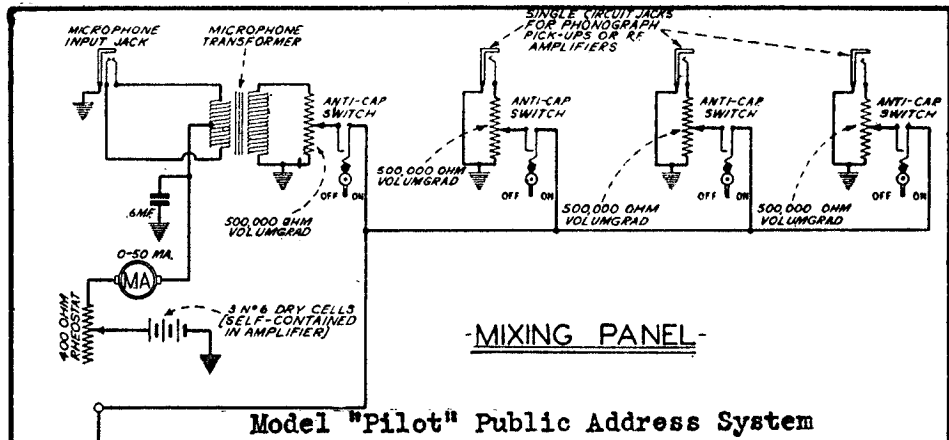
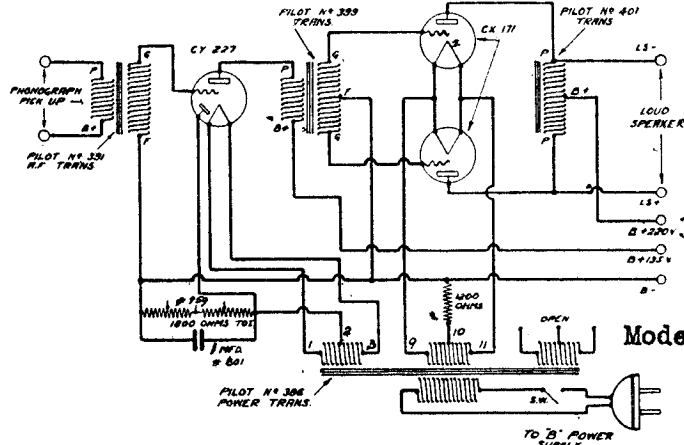
A heater by-pass condenser has been added to the 296 and 296-A chassis. The number in Fig. 1 is 26 and the part number is 3557. This condenser prevents any tendency of the Receiver to oscillate, which may have been noticed on the first few Radio-Phonograph Receivers.

The chassis of the 296 and 296-A are the same as the chassis for the 96 and 96-A except for the additional wiring to the radio-phono switch and the electric turntable and pickup.



PILOT RADIO & TUBE CORP.

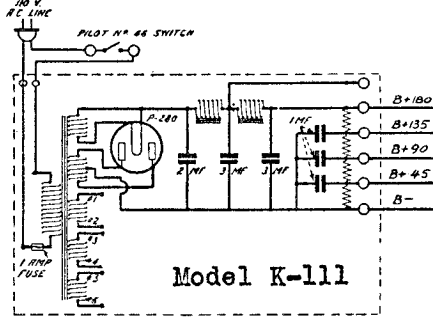
MODEL "171"
Power Amplifier
MODEL "Pilot"
Public Address
System



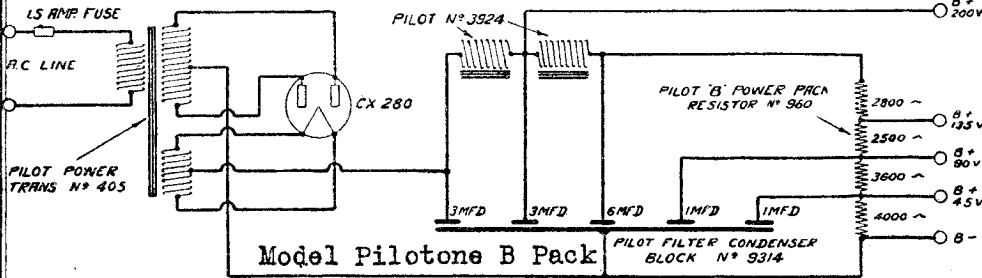
Schematic circuit diagram of the power supply.

MODEL K-111 ABC Pack
 MODEL Pilotone B Pack
 MODEL ABC Pack for SP5
 MODEL Jumbo Power Pack
 MODEL Jumbo ABC

PILOT RADIO & TUBE CORP.

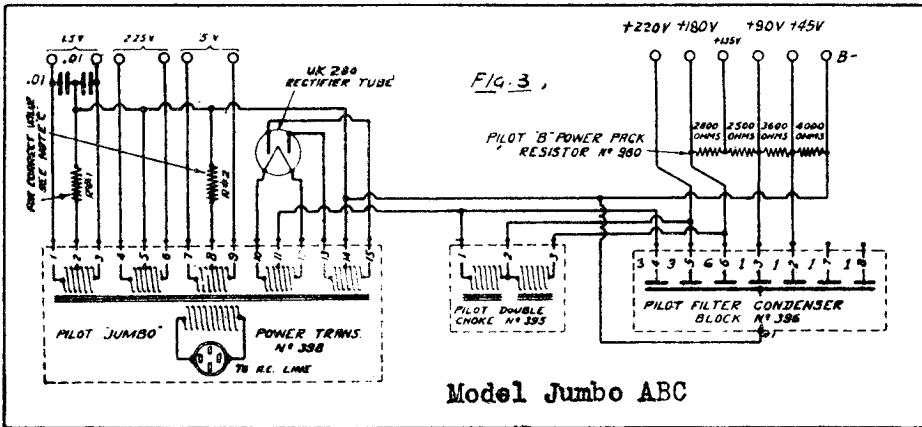


Model K-111



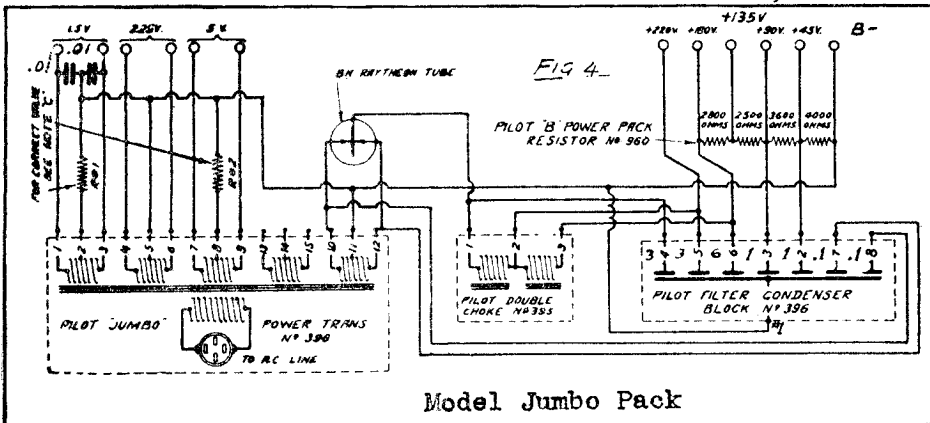
Model Pilotone B Pack

— SCHEMATIC DIAGRAM OF A PILOT *Jumbo* ABC ELIMINATOR USING THE UX 280 RECTIFIER TUBE FOR THE PLATE SUPPLY —
 (FOR THE CORRECT VALUE OF THE "C" BIAS RESISTANCE SEE NOTE "C")

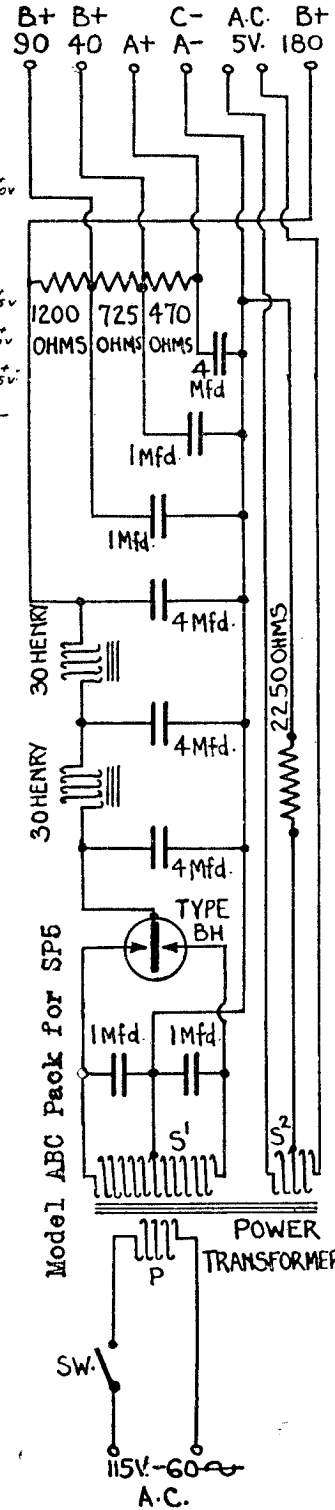


Model Jumbo ABC

— SCHEMATIC DIAGRAM OF A PILOT *Jumbo* ABC ELIMINATOR USING THE BH RAYTHEON GAS RECTIFIER TUBE FOR 'PLATE SUPPLY' —
 (FOR THE CORRECT VALUE OF THE "C" BIAS RESISTANCE SEE NOTE "C")

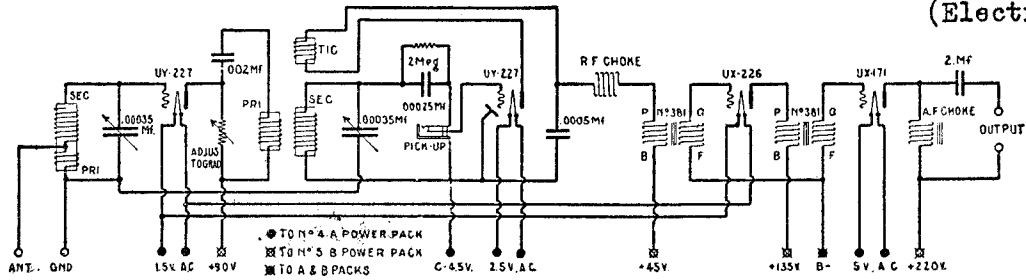


Model Jumbo Pack

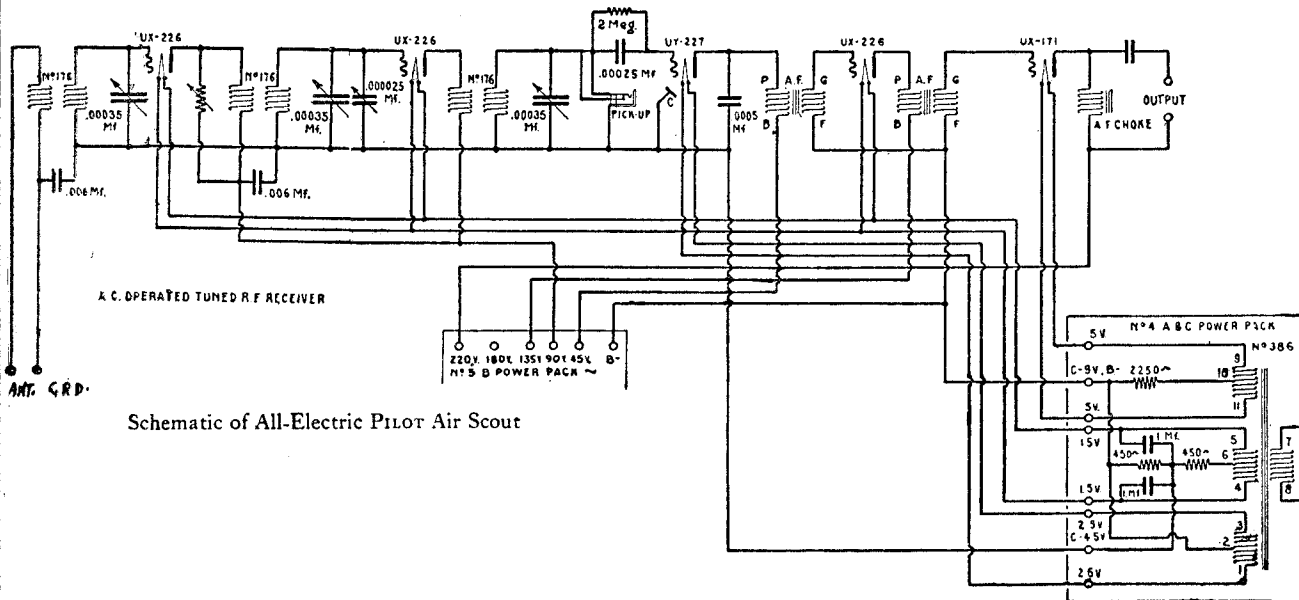


PILOT RADIO & TUBE CORP.

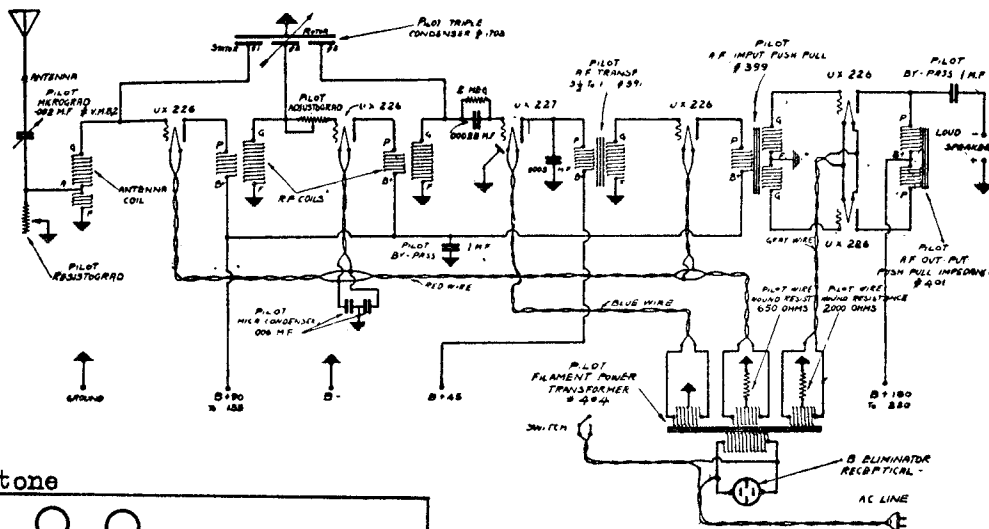
MODEL Air Hound
(All-Electric)
MODEL Air Scout
(All-Electric)
MODEL Pilotone
(Electric)



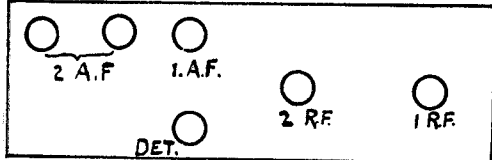
The Air Hound All-Electric Receiver, One Stage R.F., Detector, Two Stages A.F.



Schematic of All-Electric PILOT Air Scout



Pilotone

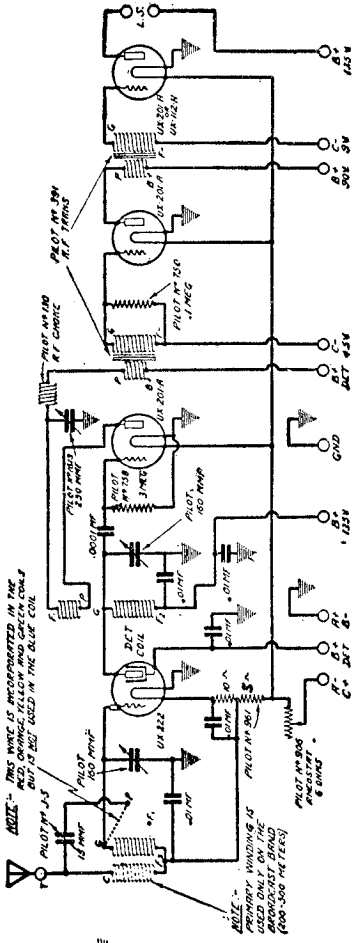


Pilotone Electric receiver

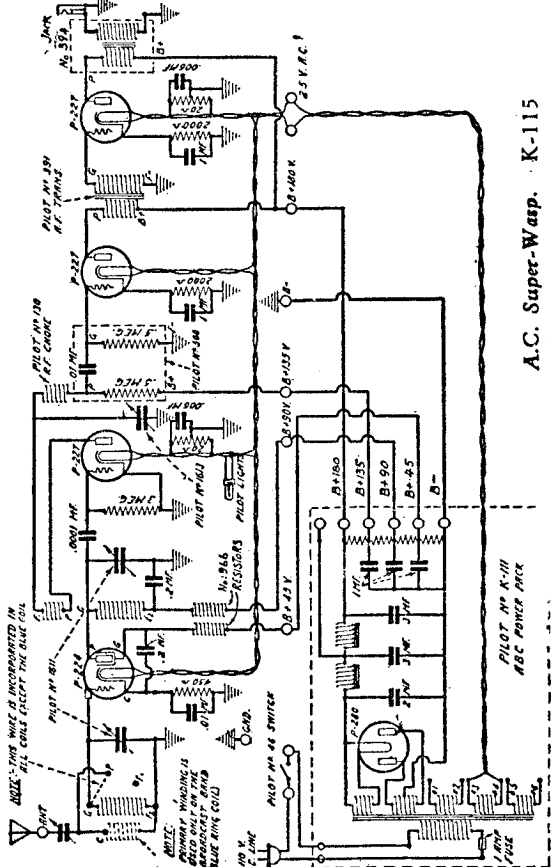
PILOT RADIO & TUBE CORP.

MODEL K-110
MODEL K-115
MODEL K-117

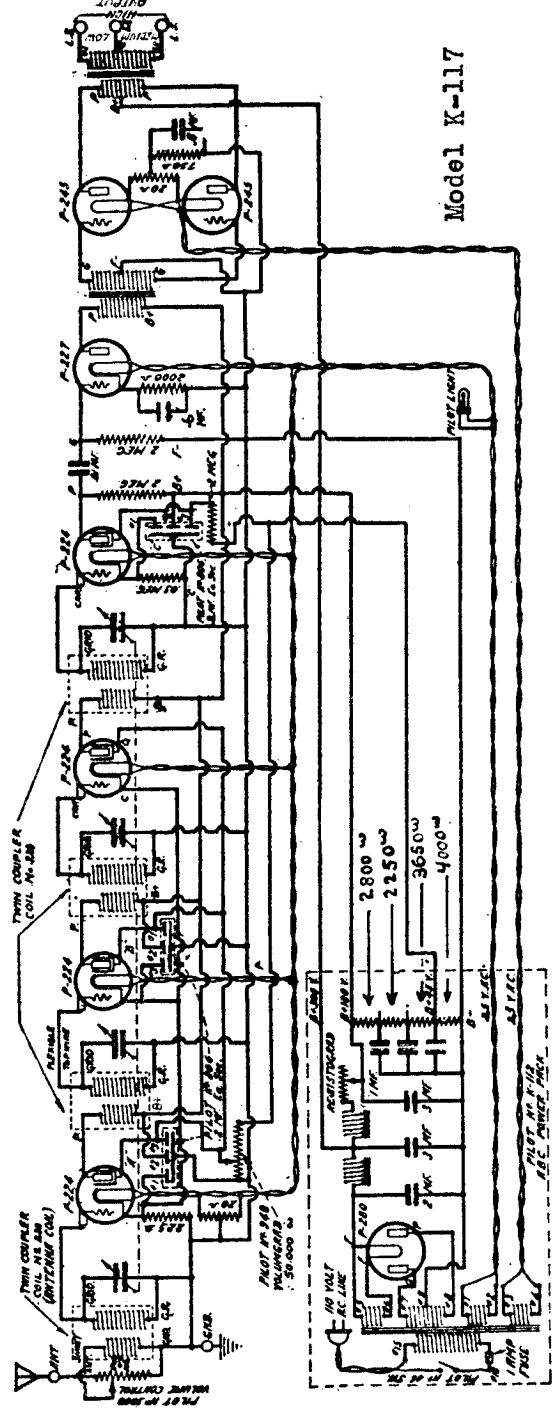
PILOT "SUPER-WASP" Battery Model, K-110



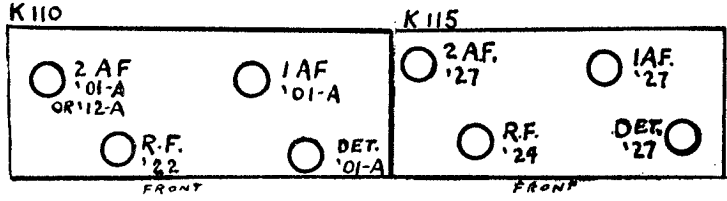
A.C. Super-Wasp. K-115
14-500 Meter Wavelength Range



Model K-117

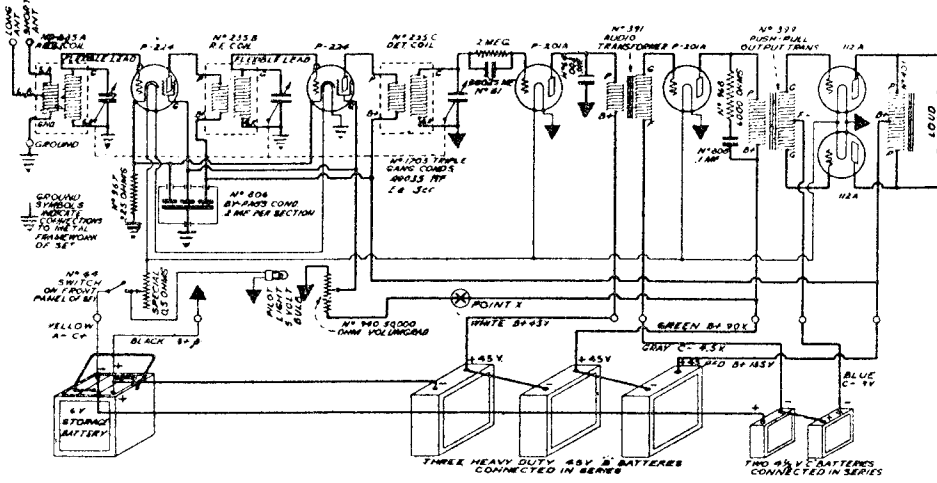


"Pilot Twin Screen - Grid 8"

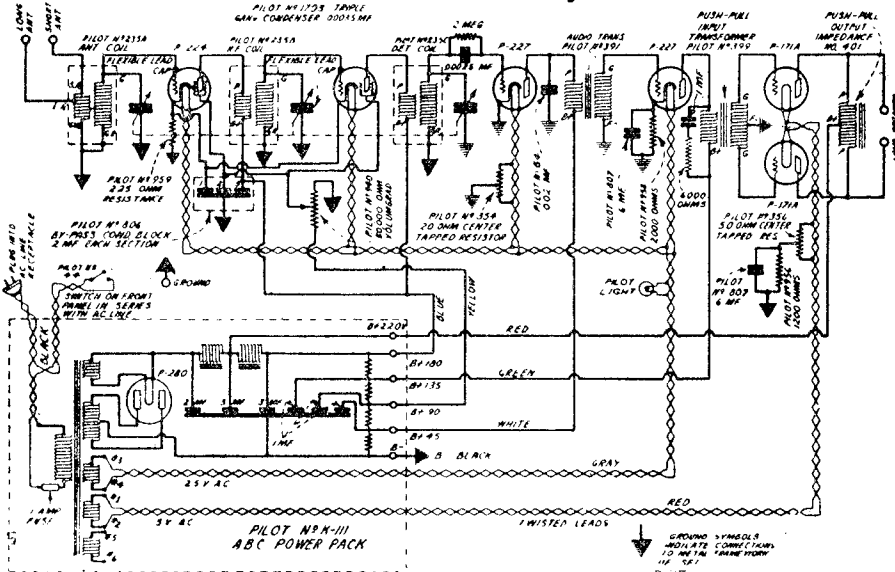


MODEL K-121, K-121X
 MODEL PE-6 SG, K-122,
 K-123, K-124
 MODEL K-126, K-128

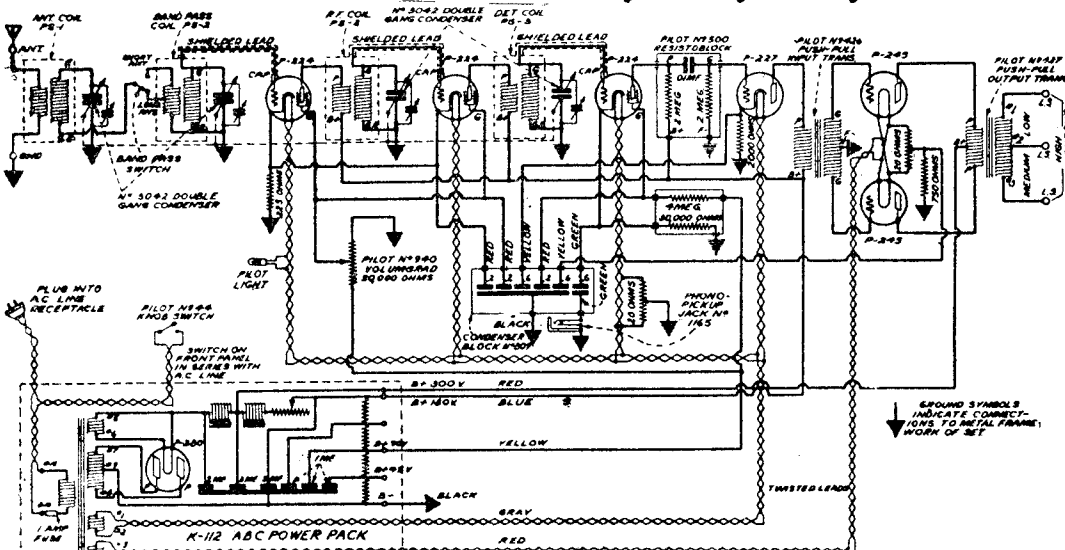
PILOT RADIO & TUBE CORP.



Model K-121, K-121 X



Model PE 6SG, K-122, K-123, K-124

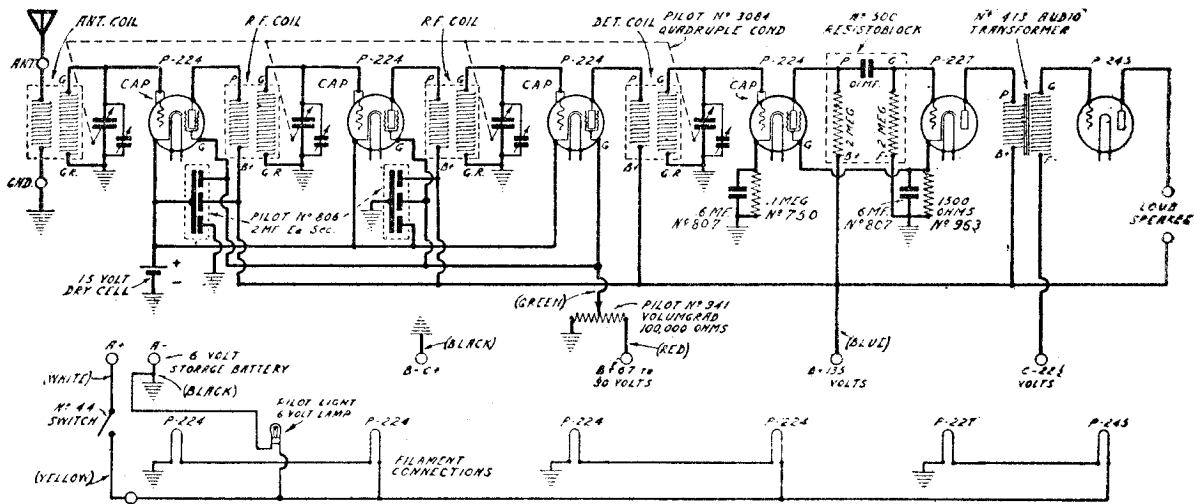


Model K-126, K-128

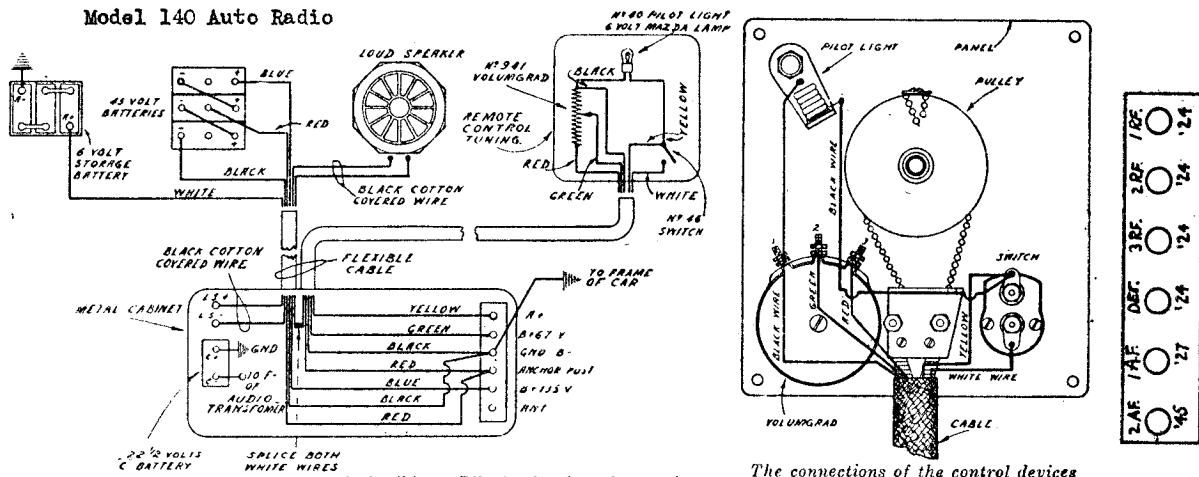
COUNTRY SPECIAL	1RF 124	2RF 124
	1AF 101-A	DET. 101-A
K 122	2 A.F. 12-A	(FRONT)
	1RF 124	2 RF 124
K 126 - K 128	2 A.F. 127	DET. 127 (FRONT)
	1AF 127	DET. 124
	2 A.F. 124	2 RF 124 (FRONT)
	RECT. 180	1RF 124

PILOT RADIO & TUBE CORP.

MODEL 140 Auto Radio
MODEL S.W. Converter

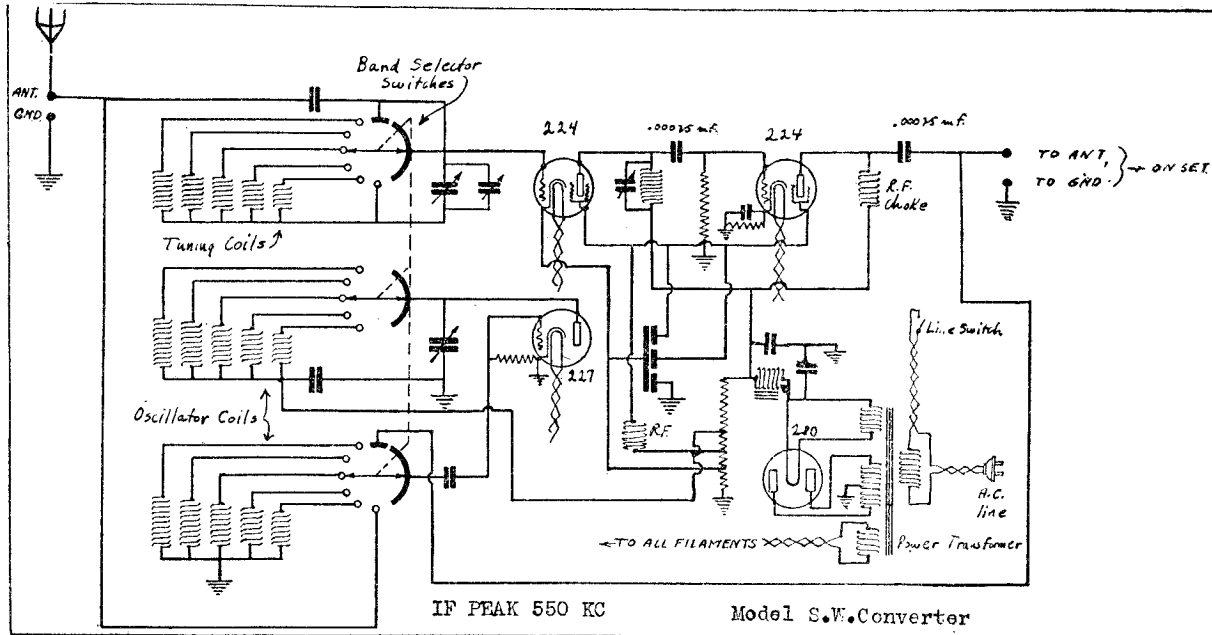


Model 140 Auto Radio



Complete diagram of connections of the "Auto Pilot," showing the receiver proper, the control panel, the loud speaker, and the "A" and "B" batteries, i.e.

The connections of the control devices in picture form.

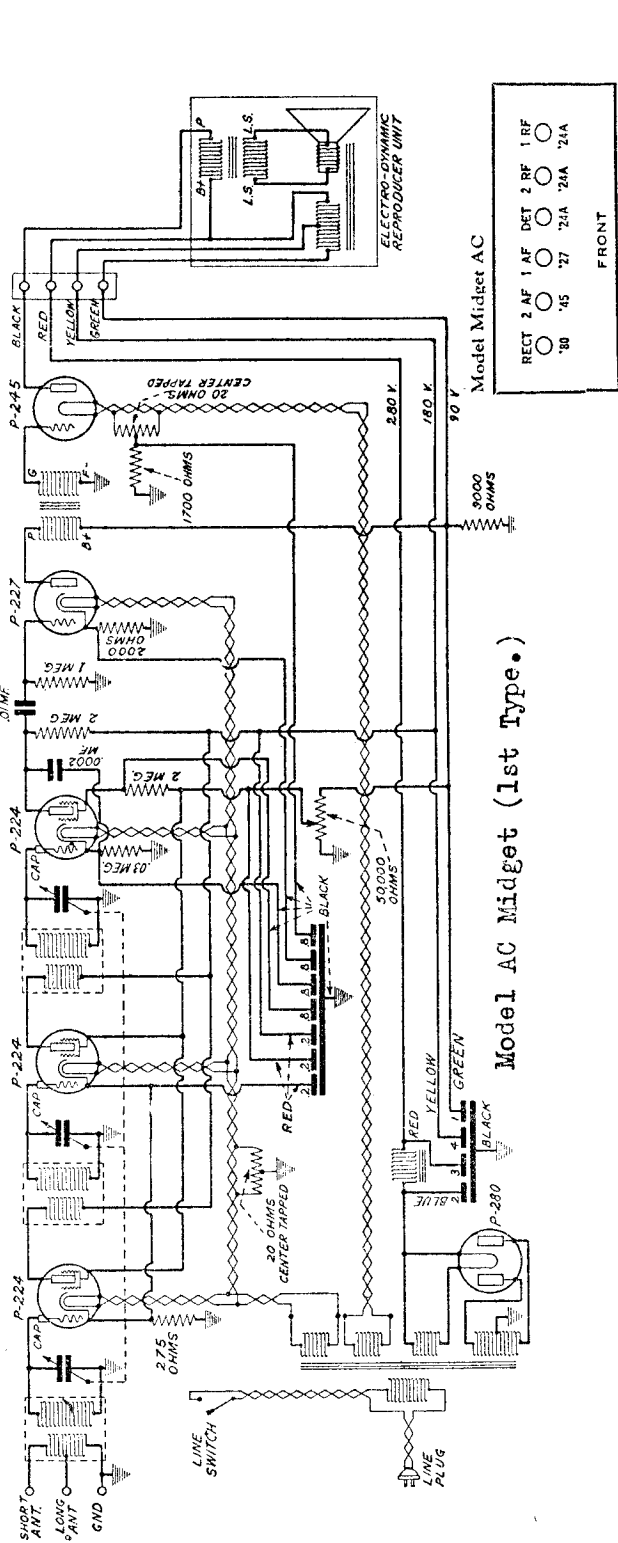


IF PEAK 550 KC

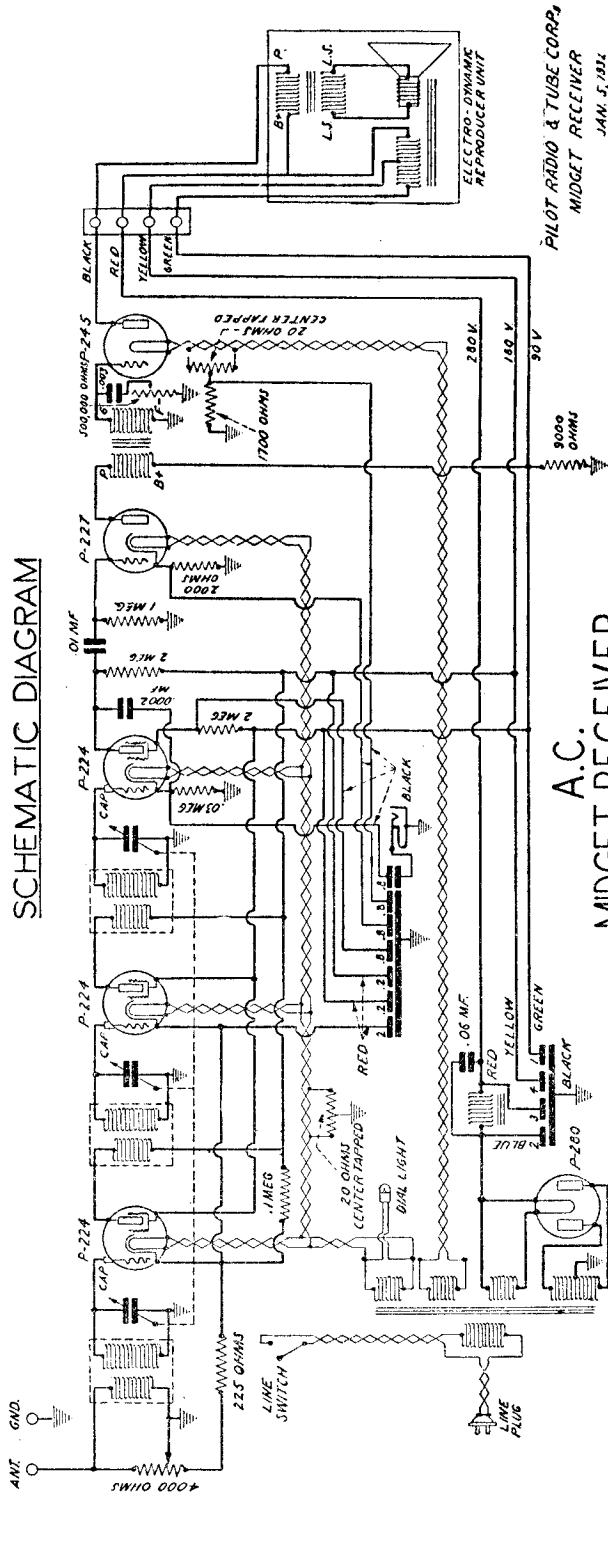
Model S.W. Converter

PILOT RADIO & TUBE CORP.

MODEL AC Midget
 S-155, S-155-A,
 S-155-B, S-155-F,
 C-157, C-157-A,
 C-157-B, C-157-F



SCHMATIC DIAGRAM



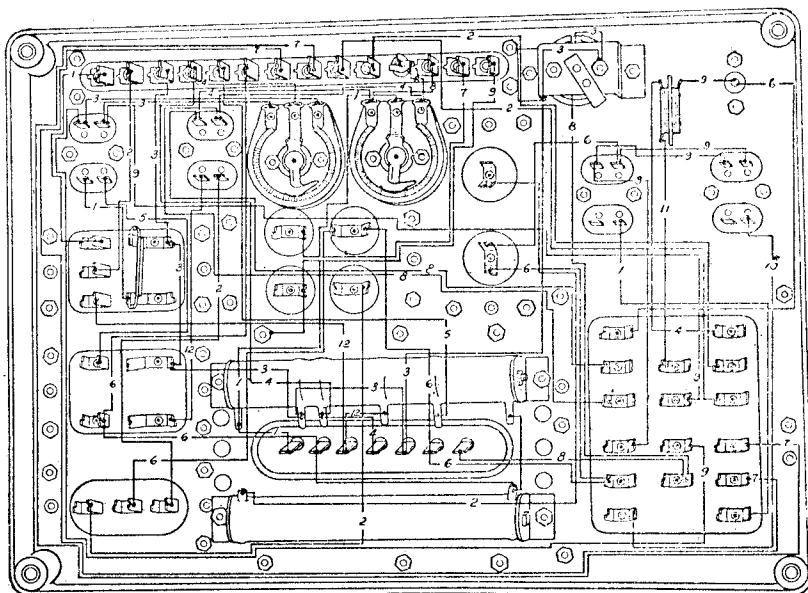
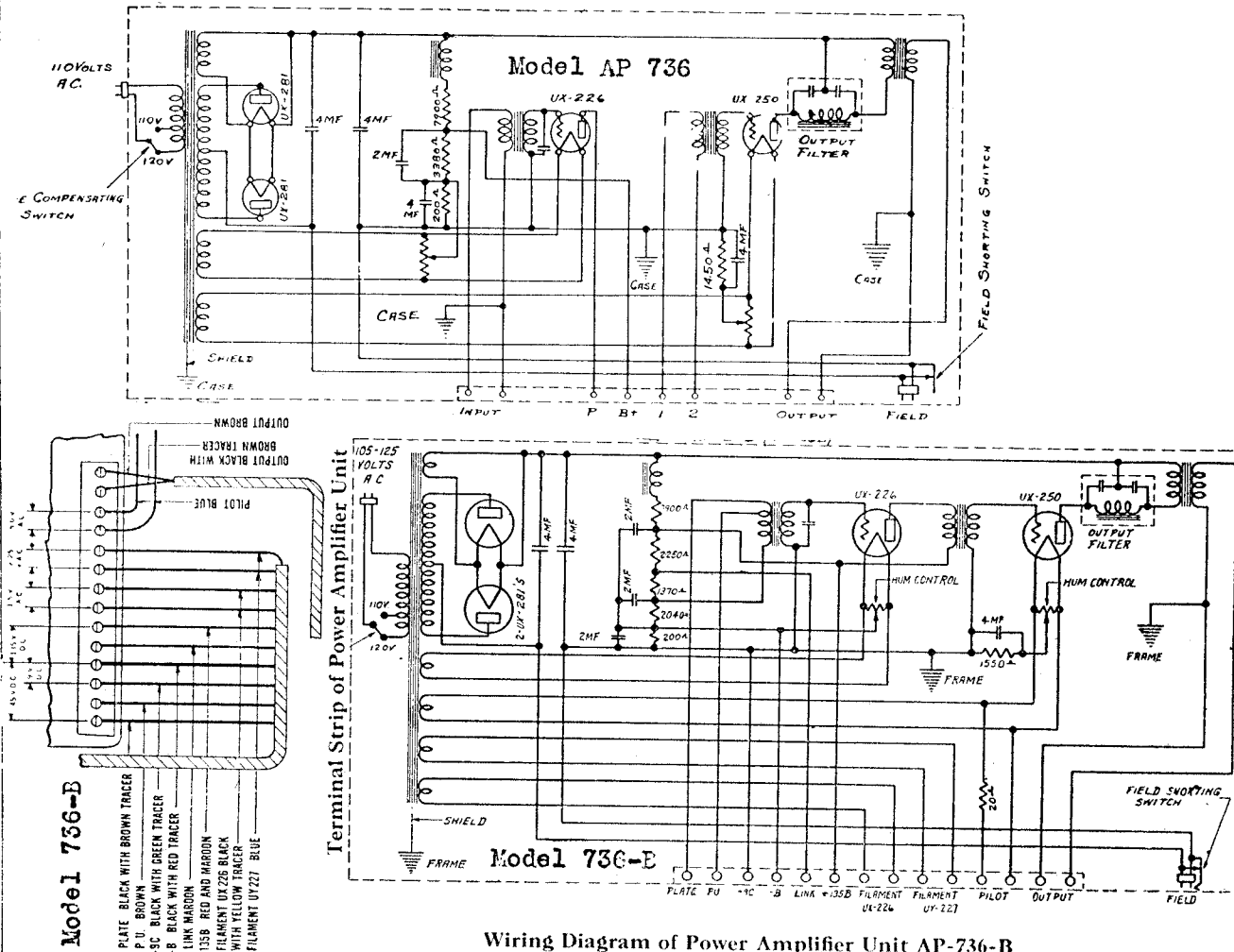
A.C. MIDGET RECEIVER

Model AC Midget (2nd Type)

PILOT RADIO & TUBE CORP.
 MIDGET RECEIVER
 JAN. 5, 1934

R. C. A. VICTOR CO., INC.

MODEL AP-736
MODEL AP-736-B

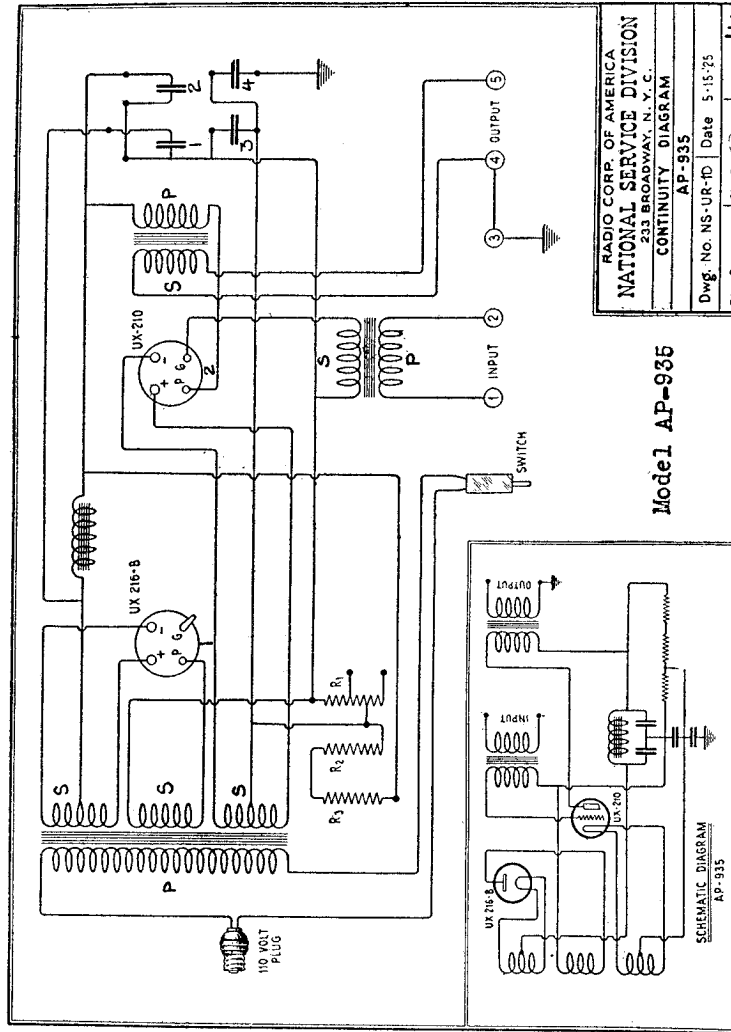
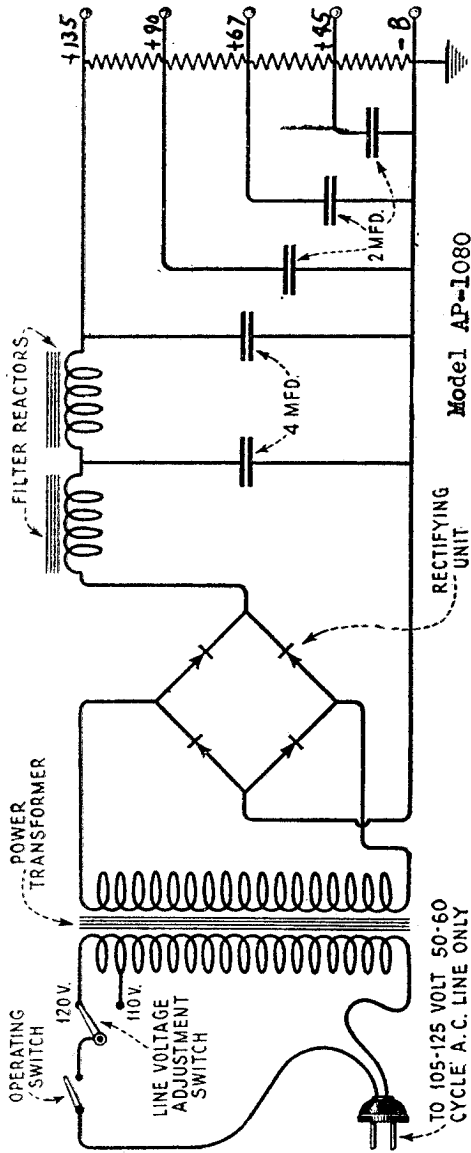


- Color Code**
1. Brown
 2. Blue
 3. Yellow
 4. Black with Red Tracer
 5. Red and Maroon
 6. Red
 7. Black with Yellow Tracer
 8. Green
 9. Black
 10. Light Brown
 11. Red and Black
 12. Maroon

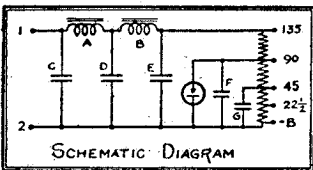
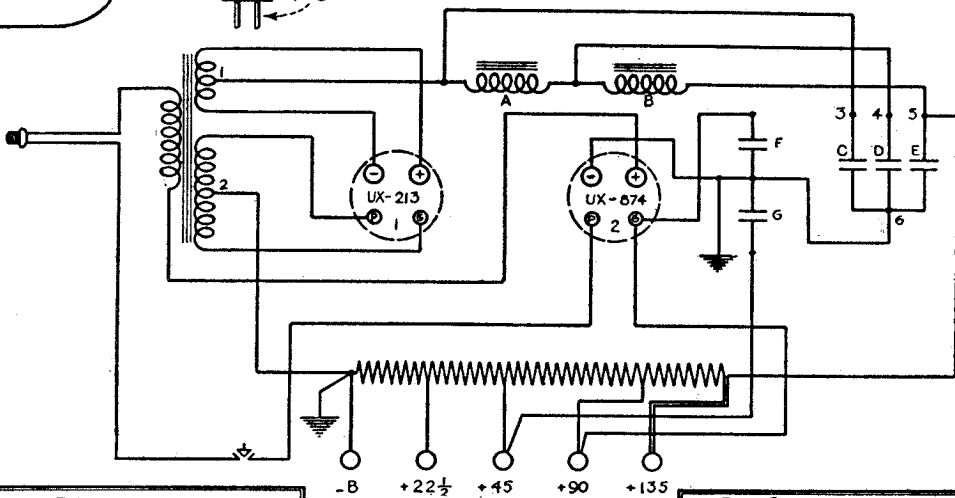
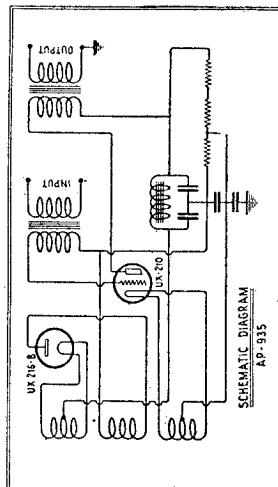
Bottom of Power Amplifier Unit AP-736-B, showing wiring between terminals

R. C. A. VICTOR CO., INC.

MODEL AP-937
 MODEL AP-935
 MODEL AP-1080



RADIO CORP. OF AMERICA
 NATIONAL SERVICE DIVISION
 233 BROADWAY, N. Y. C.
 CONTINUITY DIAGRAM
 AP-935
 Dwg. No. NS-UR-1D Date 5-15-75
 Dwn. By JPM Ckd. By C.R.U. Appd. By J.M.



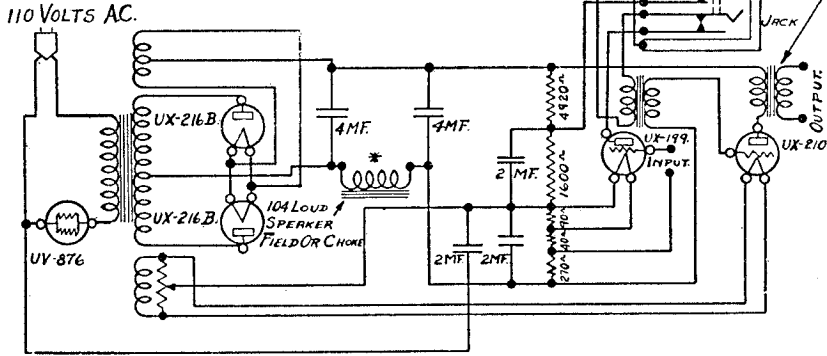
RADIO CORP. OF AMERICA
 NATIONAL SERVICE DIVISION
 233 BROADWAY NYC
 RCA DUO-RECTRON
 MODEL AP-937
 Dwg. NS-DR-1D DATE 4-9-26
 Dwn. by JM Ckd. by C.R.U. Appd. by J.M.

MODEL AP-995
 MODEL AP-952
 MODEL AP-997-C
 MODEL 12-25 Tuscany
 MODEL 8-60

R. C. A. VICTOR CO., INC.

NOTE: AP-997 HAS 1:1 OUTPUT TRANSFORMER. AP-952 HAS 25:1.

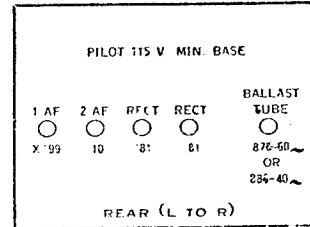
*FIELD OF CONE SPEAKER IN AP-952 REPLACED BY CHOKE COIL IN AP-997



Wiring Diagram AP 952, and AP 997

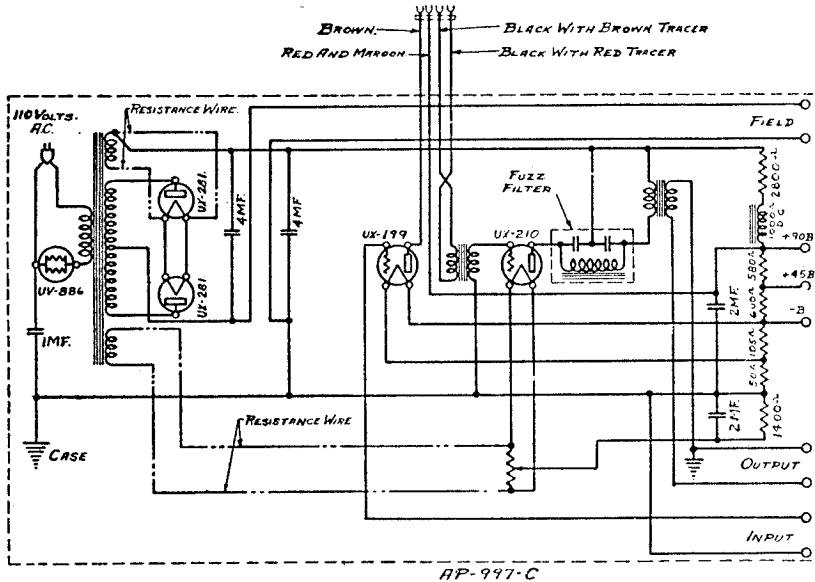
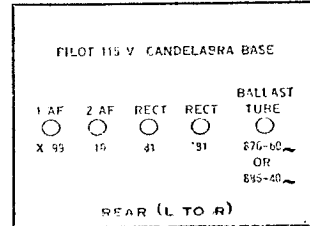
Victor designation RPA-5 Spec.
 Used on 8-60.

Model Electrola Tuscany (1926)



Victor designation RPA 5
 Used on 12-25, Tuscany

Models Victors 8-60, 12-2, 12-25 (1926)



Wiring Diagram of Power-Amplifier Unit AP-997-C

Used on Victor 12-15.

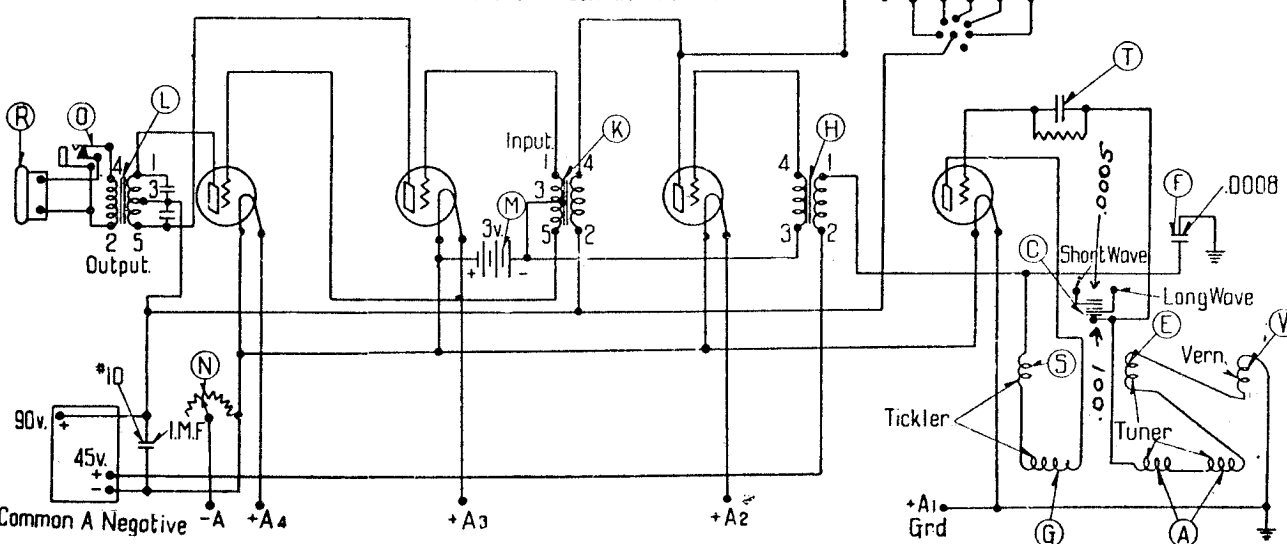
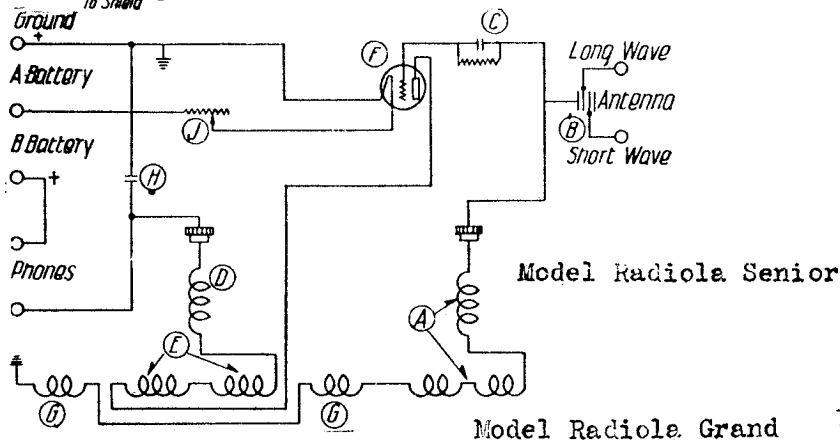
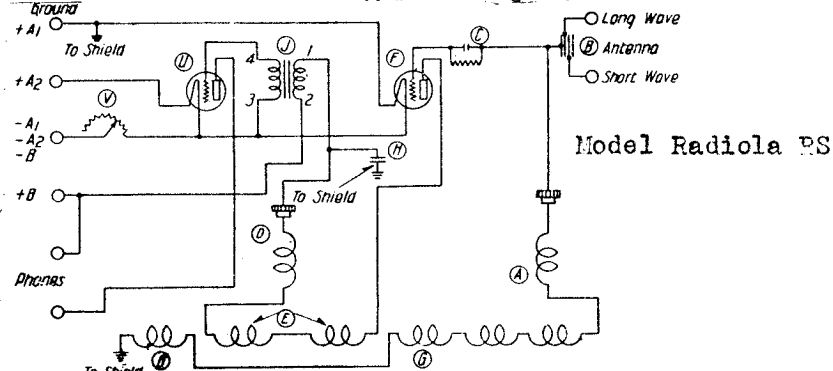
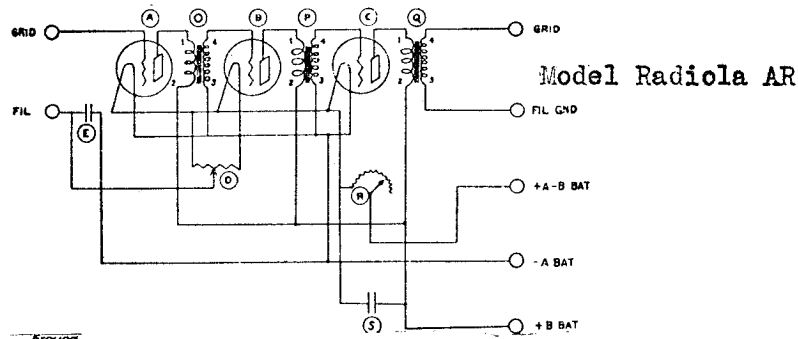
The list below for Victor power-amplifier units contained in new instruments since June 1, 1927 gives the RCA symbol number, the Victor part number, and the instrument on which each unit is used.

RCA SYMBOL	VICTOR PART NO.	USED ON
AP-947-X	20652	9-40*
AP-997-X	18575	10-51
AP-952-Y	18569	10-70
AP-997-Y		
AP-947-A	18891	9-25
AP-997-A	18574	9-55
AP-951-B		
AP-997-C	20569	12-15

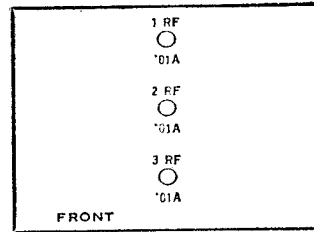
- The AP-947-X differs from the AP-947 in that it has a 25 to 1 output transformer and no filter choke.
- The AP-997-X differs from the AP-997 in this same manner.
- The AP-952-Y differs from the AP-952 only in the substitution of a terminal strip for the input jack.
- The AP-997-Y differs from the AP-997 in that it has a 25 to 1 output transformer, a fuzz filter, a terminal strip instead of a jack, and no filter choke.
- The AP-947-A, AP-951-B, and AP-997-A differ from the AP-947 in that they require the UX-281 and UV-886 Radiotrons instead of the UX-216-B and UV-876; a 25 to 1 output transformer is used; the resistors are of different values; resistance wire is used in the UX-281 and UX-210 filament leads; and the filter choke instead of being connected in the filter circuit is used in the voltage drop circuit to stabilize the amplifier.
- The AP-997-C differs from the AP-997 in the same respects as described in (c) above.

R. C. A. VICTOR CO., INC.

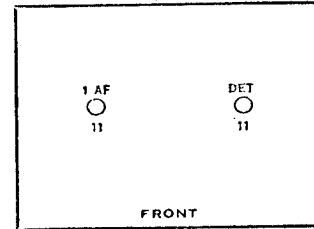
MODEL Radiola Grand
 MODEL Radiola Senior
 MODEL Radiola AR
 MODEL Radiola RS



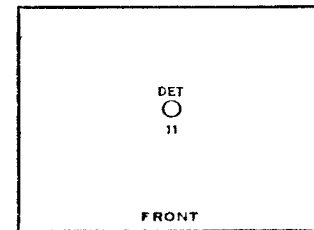
Model Radiola AR (1922)



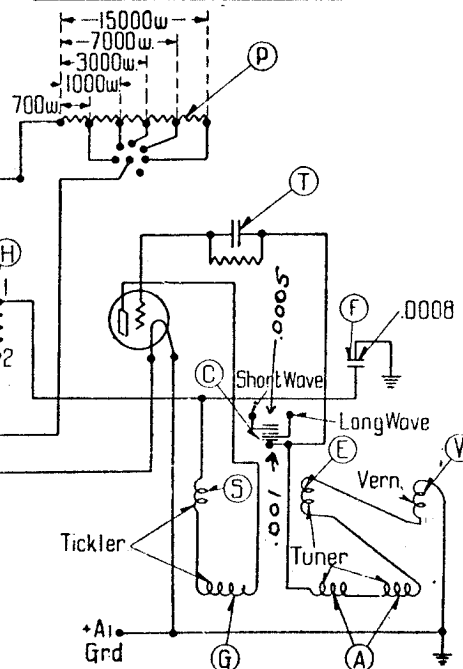
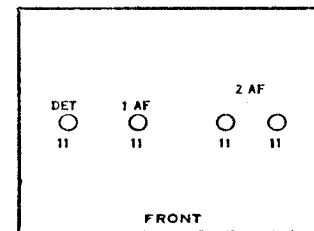
Model Radiola RS (1922)



Model Radiola Senior (1922)

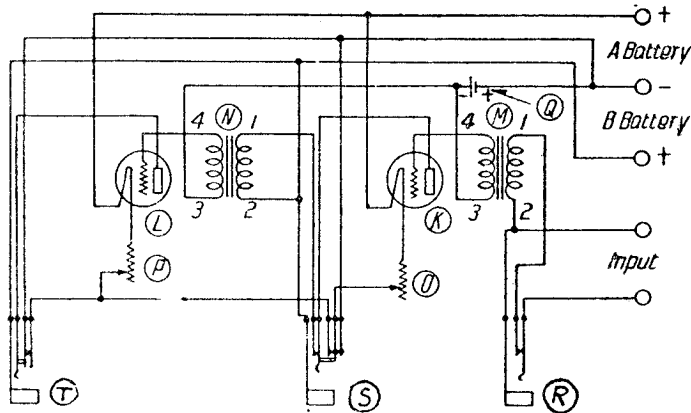


Model Radiola Grand (1922)



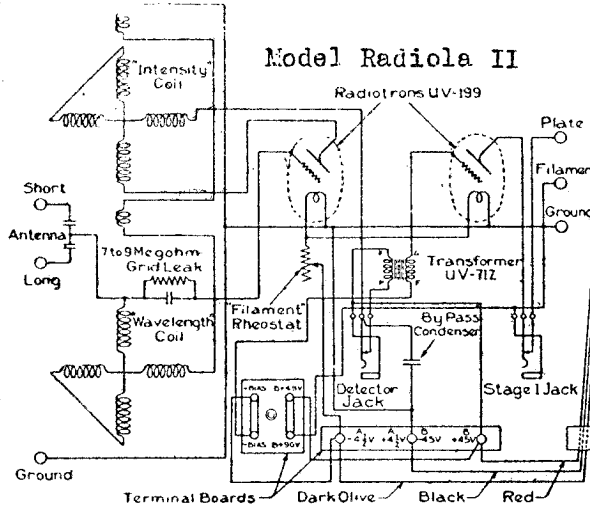
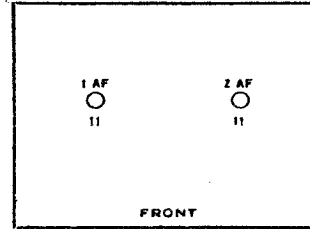
MODEL Radiola II
 MODEL Radiola III
 MODEL Radiola
 Balanced Amp.
 MODEL Radiola Sen. Amp.

R. C. A. VICTOR CO., INC.

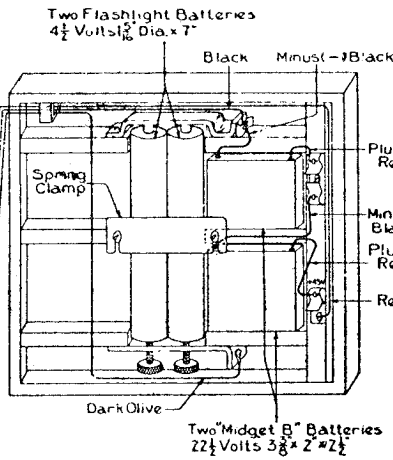


Model Senior Amp.

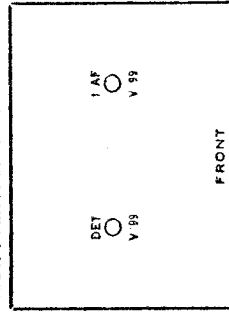
Model Radiola Senior Amplifier (1922)



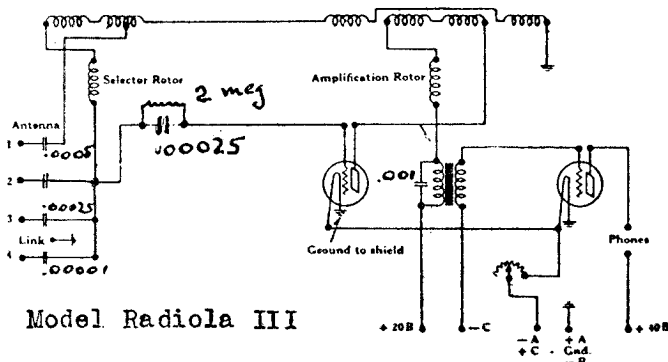
Model Radiola II



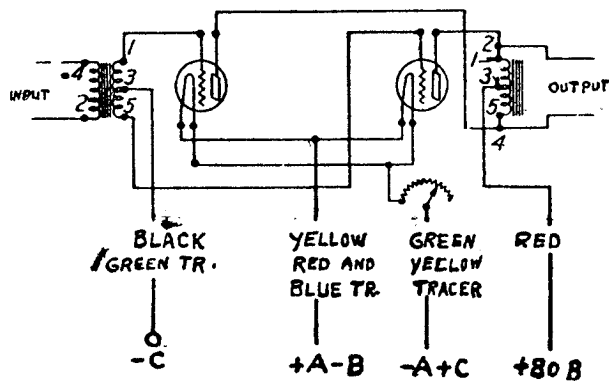
Model Radiola II (1924)



Model Balanced Amp.

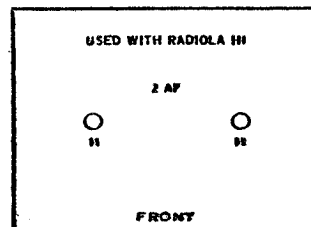
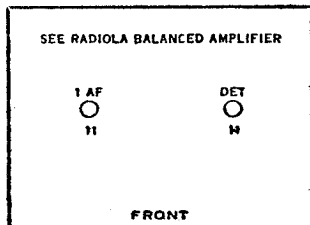


Model Radiola III



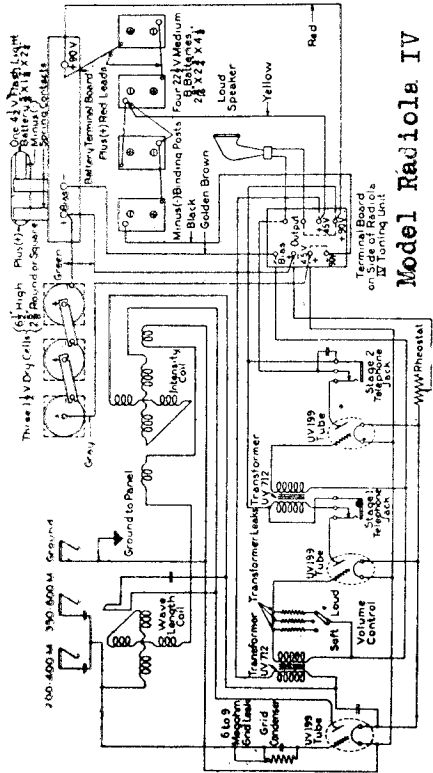
Model Radiola Balanced Amplifier (1924)

Model Radiola III (1924)

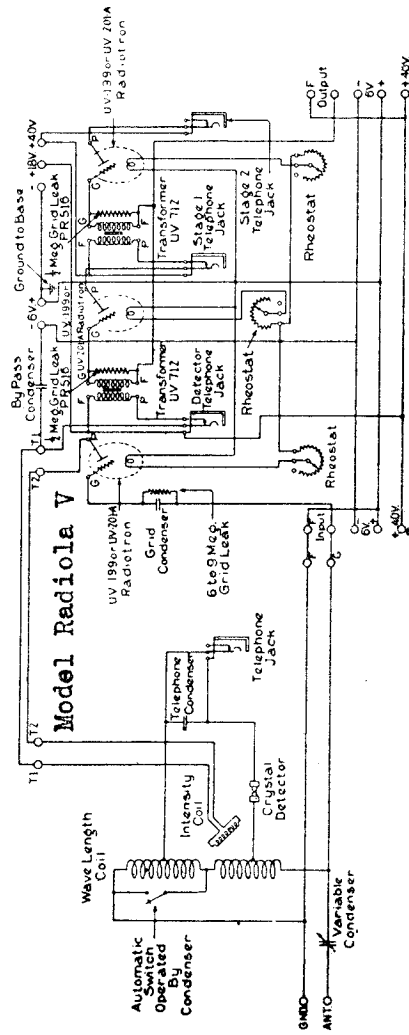


R. C. A. VICTOR CO., INC.

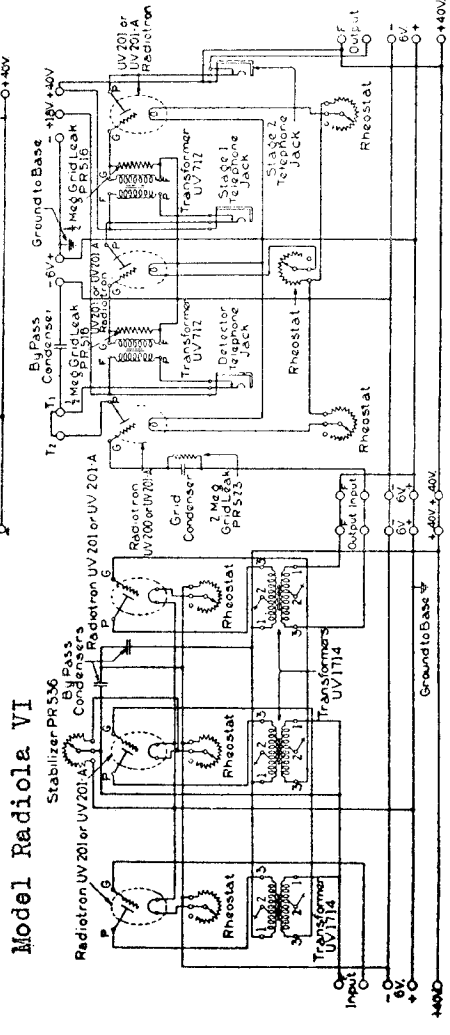
- MODEL Radiola III-A
- MODEL Radiola IV
- MODEL Radiola V
- MODEL Radiola VI



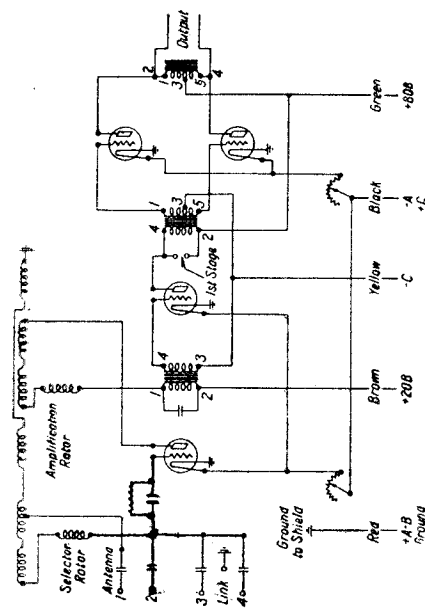
Model Radiola IV



Model Radiola V

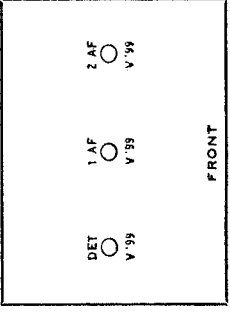


Model Radiola VI

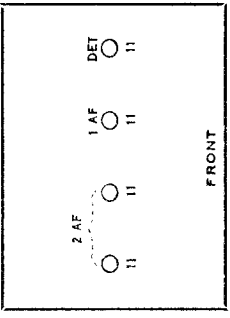


Model Radiola III-A

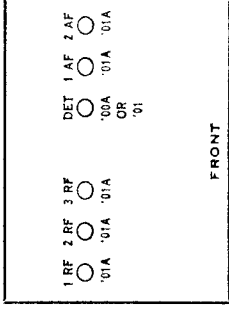
Model Radiola IV, VA (1923)



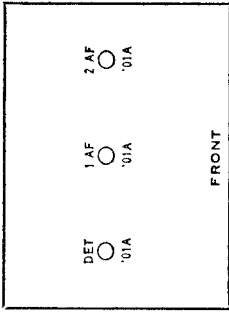
Model Radiola IIIA (1924)



Model Radiola VI (1923)

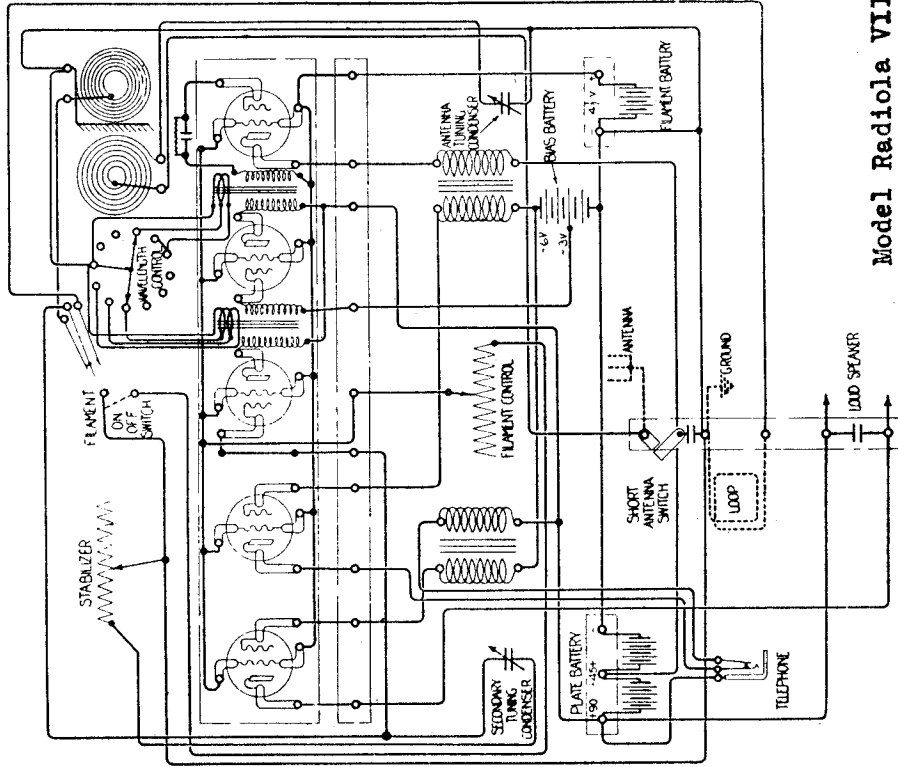


Model Radiola V (1923)



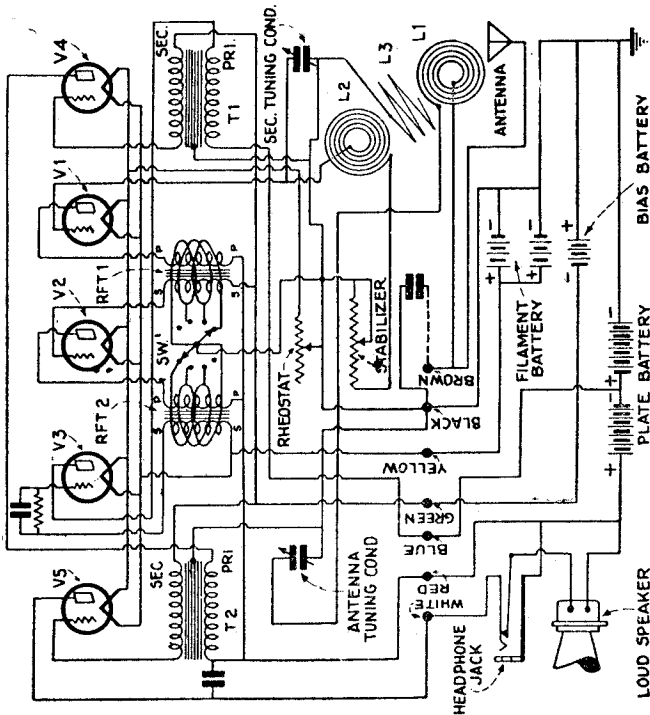
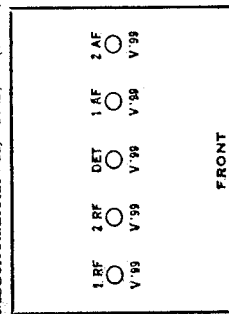
MODEL Radiola VII
 MODEL Radiola VII-B
 MODEL Radiola IX

R. C. A. VICTOR CO., INC.

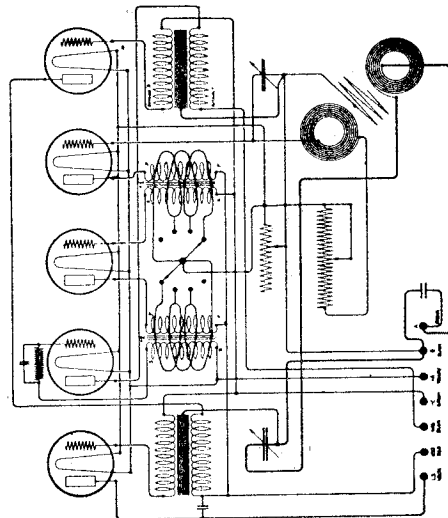


Model Radiola VII

Models Radiolas VII, VII-B, IX (1923)



Model Radiola VII-B

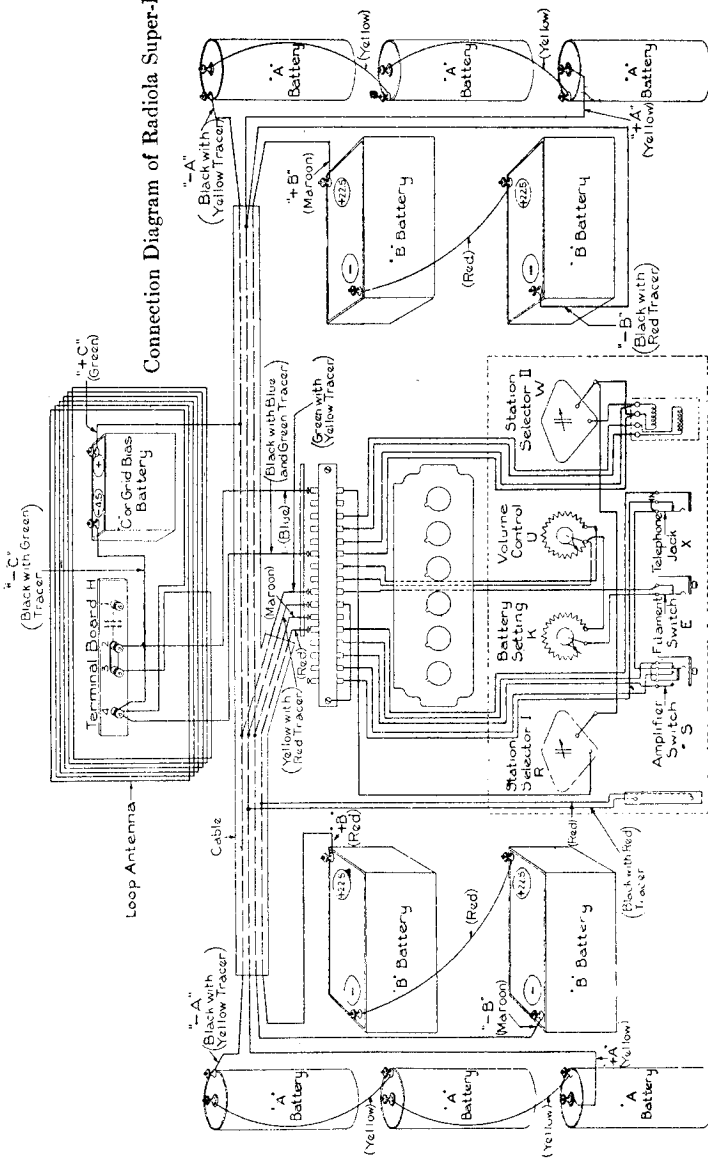


Model Radiola IX

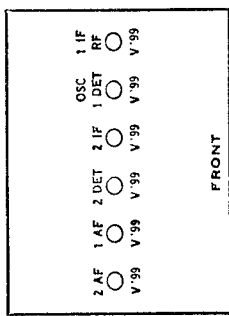
R. C. A. VICTOR CO., INC.

MODEL Radiola Super VIII

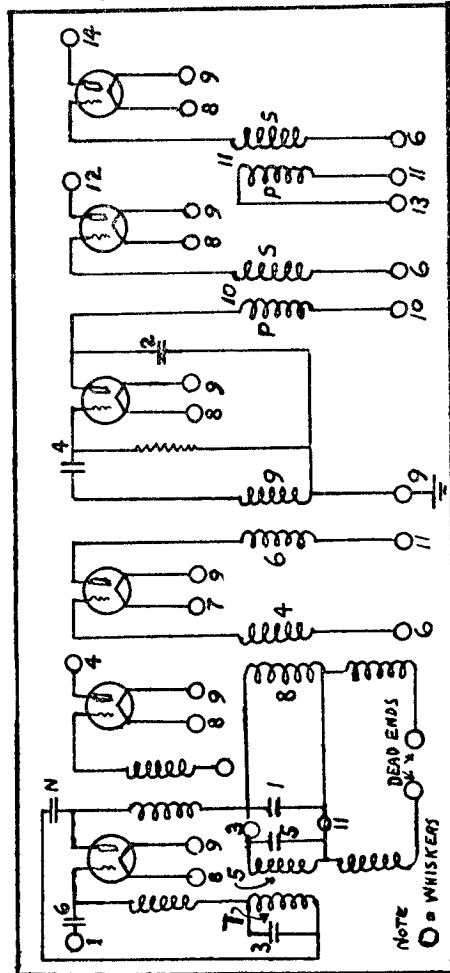
Connection Diagram of Radiola Super-Heterodyne



Model Radiola Super-VIII (1925)



Continuity Test Circuit Of Standard Six Tube Catacomb. Radiolas 24, Super-Heterodyne, Super-VIII.



- Term No. From 6 to 9 Maximum 4.5 volts. Minimum 4 volts
- 9 to 10 Maximum 4.5 volts. Minimum 3 volts with all tubes lighted.
- 10 to 11 Maximum 45 volts. Minimum 34 volts.
- 11 to 12 Maximum 45 volts. Minimum 34 volts.
- 8 to 10 Maximum 3 volts when the volume control rheostat is at 100, and the battery setting rheostat is properly adjusted.

The numbers refer to terminals on the catacomb terminal board starting at the right when looking at the front of the panel.

MODEL R-5 AC
Parts List
Notes

R. C. A. VICTOR CO., INC.

RCA Victor Radiolette R-5

The RCA Victor Radiolette R-5 is a vacuum circuit R.F. type radio receiver. Compact construction together with good sensitivity, selectivity and high output are features of this receiver.

The receiver uses four Radiotrons, two UY-224, one UX-280, and one RCA-247 Power-Output Pentode. Referring to Figure 1 and tracing a signal through the various stages we find the following action taking place.

The antenna and ground are connected to each side of a 20,000 Ohm potentiometer. The moving contact of the potentiometer is connected to the primary of the first R.F. transformer through a .00013 MFD. condenser, the other side of the transformer being connected to ground. The action of the potentiometer, reducing the voltage applied to the grid of the first R.F. tube, constitutes that of a volume control. The secondary of the R.F. transformer is connected to the grid circuit of the R.F. Radiotron UY-224, which is tuned by one unit of the gang condenser. The plate circuit of this tube works into the primary coil of the 2nd R.F. transformer.

The detector is of the regenerative, grid bias type and its output is coupled by means of resistance coupling to the output Radiotron RCA-247. The regenerative feature of the detector is un-

usual in that it uses two regeneration coils. One of these resonates at a low frequency and improves the sensitivity at that end, while the other has but few turns and brings up the sensitivity at the high frequency end.

The output stage uses the RCA-247 Output Pentode which gives a high undistorted output—2.5 watts—together with a high gain in the stage.

The grid bias for this tube is obtained by using a portion of the drop across the reproducer field. Due to the fact that the plate current of the RCA-247 represents the greatest portion of the total plate current, using the drop across the field acts as a semi-self biasing arrangement.

Plate and grid supply to all tubes is supplied through the use of Radiotron UX-280. The filter is of the "brute force" type. The reproducer unit field coil functions as the reactor. One electrolytic 10 MFD. capacitor and one paper 2 MFD. capacitor act as filter capacitors.

LINE-UP CAPACITOR ADJUSTMENTS

Two adjustable capacitors are provided for aligning the two tuned circuits at the high frequency end of the scale. The following procedure may be used for making any readjustments that may be necessary.

A. Procure an Oscillator giving a modulated signal at exactly 1400 K.C. Also procure a special socket wrench such as RCA Victor Stock No. 3007.

B. An output indicator is necessary. This may be a current squared thermogalvanometer connected to the secondary of the output transformer in place of the cone coil or other types of output indicators.

C. Turn the station selector until the knob reads exactly 0. Then remove the chassis from the cabinet being careful not to disturb the setting of the dial. The gang condenser rotor plates should be fully meshed with the stator plates. If not, then the dial drum must be adjusted until such a condition exists. Replace the chassis in the cabinet.

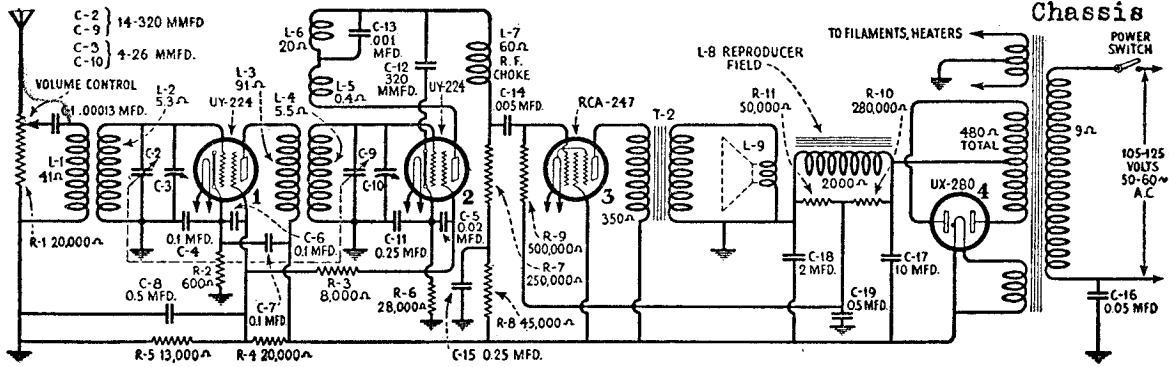
D. Place the oscillator in operation at exactly 1400 K.C. and couple its output to the antenna lead. Set the dial scale at 85 and place the Radiolette in operation. Place a soft pad on the bench and turn the instrument on its side. Now with the special wrench, adjust each line-up capacitor until maximum output is obtained in the output meter. Be careful to adjust the volume control or oscillator output so that an excessive reading is not obtained. Go over each adjustment a second time to compensate for any interlocking of adjustments.

REPLACEMENT PARTS

Part No.	DESCRIPTION	List Price	Part No.	DESCRIPTION	List Price
2549	Resistor—250,000 Ohms—Carbon type—Package of 5.	\$3.00	3006	Capacitor .001 Mfd.—Used across low frequency tickler coil.	\$0.50
2747	Cap. Control grid contactor cap—Package of 5.	.50	3007	Wrench—Special wrench for R.F. line-up condenser adjustments.	1.00
2954	Capacitor—By-pass capacitor pack containing three .01 Mfd. capacitors.	.75	5817	Resistor—20,000 Ohms—Carbon type.	.90
2955	Transformer—First R.F. transformer complete with mounting washer and nut.	1.50	7054	Cord—Power cord complete with male connector plug.	1.00
2956	Transformer—Second R.F. transformer complete with mounting washer and nut.	2.00	7229	Socket—Five prong Radiotron socket complete with insulating shield—3 used—Package of 2.	.50
2957	Capacitor 10 Mfd. electrolytic type—Complete with terminal, insulating washer, mounting nut and lock washer.	3.00	7230	Socket—Four prong Radiotron socket complete with insulating shield—1 used—Package of 2.	.50
2958	Switch—Operating switch complete with mounting washers and nut.	.60	7231	Capacitor—Filter and by-pass capacitor pack—Comprising one 0.05 mfd., two 0.5 mfd., two 0.25 mfd. and one 2.0 mfd. condensers.	2.50
2959	Volume control—20,000 Ohm Volume control complete with mounting washers and nut.	1.50	7232	Capacitor—2 gang variable tuning capacitor.	5.00
2960	Dial—Dial scale complete with set screws—Package of 2.	.50	7233	Transformer—Output transformer—With fibre terminal board.	1.50
2961	Coil—Detector plate R.F. choke coil.	.50	7236	Cone—Reproducer cone complete with voice coil and paper ring.	1.50
2962	Capacitor—0.005 Mfd. audio coupling capacitor.	.75	8669	Transformer—Power transformer—105-125 volt. 50-60 cycle—Complete with mounting washers and nuts.	6.00
2963	Resistor—8000 Ohms—Carbon type—Package of 5.	2.50	8670	Transformer—Power transformer—105-125 volt. 25-40 cycle—Complete with mounting washers and nuts.	9.00
2964	Resistor—13000 Ohms—Carbon type—Package of 5.	2.50	8671	Transformer—Power transformer—220 volts, 50-60 cycles—Complete with mounting washers and nuts.	8.00
2965	Resistor—600 Ohms—Carbon type—Package of 5.	2.50	10434	Resistor—Mid-tapped filament resistor—Used on early models only.	.50
2966	Resistor—28,000 Ohms—Carbon type—Package of 5.	2.50		SPECIAL PARTS SUPPLIED ON ORDER ONLY (Not to be stocked)	
2967	Resistor—45,000 Ohms—Carbon type—Package of 5.	2.50	2979	Board—Baffle board complete with grille cloth.	.75
2969	Resistor—50,000 Ohms—Carbon type—Package of 5.	2.50	2980	Escutcheon—Station selector escutcheon complete with mounting screws.	.75
2970	Resistor—500,000 Ohms—Carbon type—Package of 5.	2.50	7233	Board—Resistor mounting board—Less all resistors, capacitors and coils.	1.00
2971	Resistor—280,000 Ohms—Carbon type—Package of 5.	2.50	7235	Coil—Field coil complete with bracket and cone ring.	2.00
2972	Shield—Radiotron shield complete with mounting screw, washer and nut.	.50	9321	Cabinet—Cabinet complete—Less all equipment.	7.25
2975	Rivet—Eyelet rivet for mounting cone—Package of 100.	.50	9339	Chassis—Receiver chassis complete—Less reproducer unit, knobs and Radiotrons.	27.50
2976	Knob—Volume control or operating switch knob—Package of 5.	1.50	9340	Reproducer unit—Reproducer unit complete.	4.75
2977	Knob—Station selector knob—Package of 5.	2.50			
2978	Screw assembly—Loudspeaker mounting screw assembly comprising four screws, four washers, four lock washers, eight nuts and four eyelets.	.60			
2981	Capacitor—320 Mmfd. detector plate R.F. by-pass capacitor.	.50			

R. C. A. VICTOR CO., INC.

MODEL R-5 AC
Schematic
Voltage
Chassis

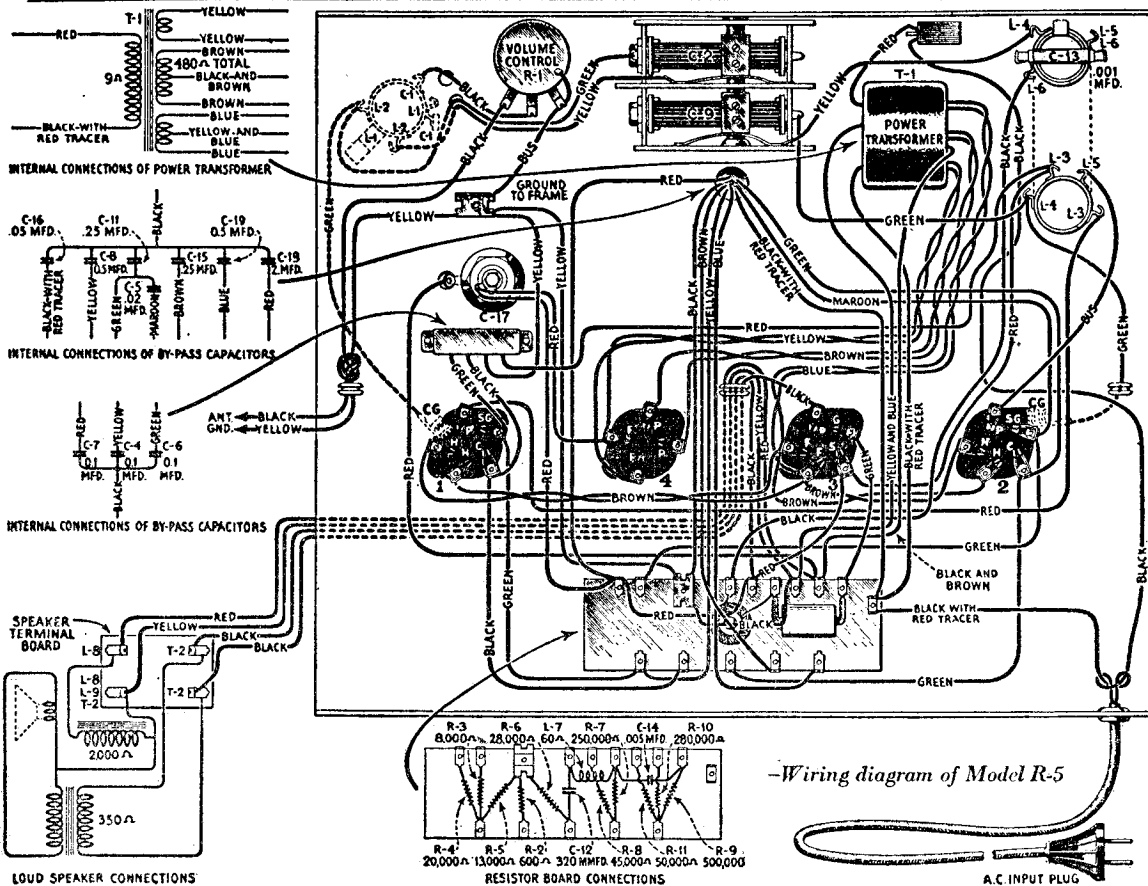


-Schematic Circuit Diagram of Model R-5

SOCKET VOLTAGE READINGS
110-VOLT LINE

These are readings obtained with the usual Set Analyzers and are not true readings of the voltages at which the Radiotrons operate.

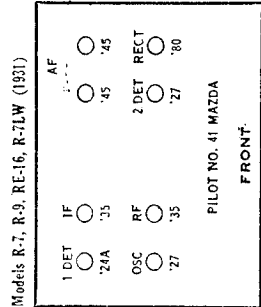
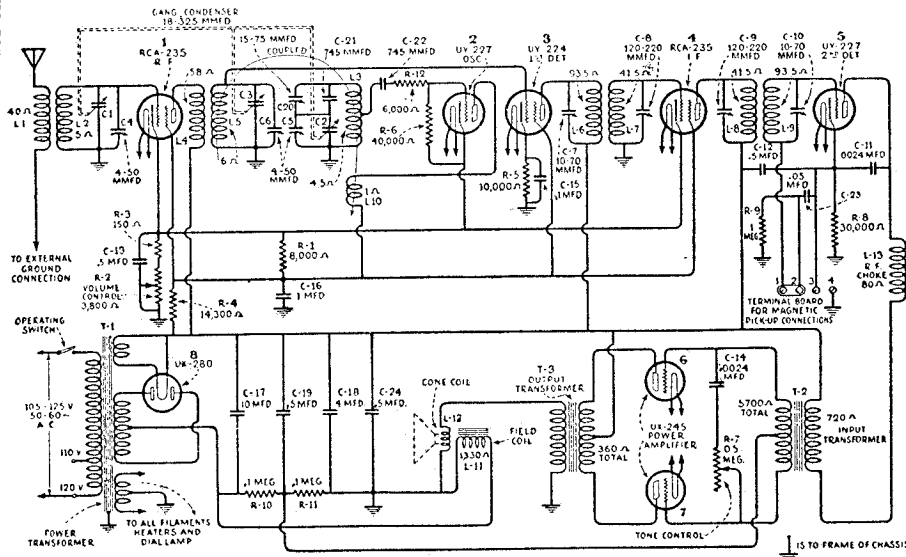
Radiotron No.	Heater to Cathode Volts	Cathode or Filament to Control Grid Volts	Cathode or Filament to Screen Grid Volts	Cathode or Filament to Plate Volts	Plate Current M. A.	Heater Volts
1	3.0	3.0	85	225	4.0	2.2
2	7.0	7.0	65	100	0.25	2.2
3	—	2.0	225	215	30.0	2.2



-Wiring diagram of Model R-5

R. C. A. VICTOR CO., INC.

MODEL R-7, R-9 AC
Superette
Schematic



IF PEAK 175 KC

RADIOLA SUPERETTE

SERVICE NOTES ***

The can at the extreme center rear of the top of the chassis is AF transformer assembly. Directly in front of it is the RF bypass capacitor pack. The can at the left front facing the chassis is the 10 mfd electrolytic condenser. Directly to the rear of this can is the 4 mfd electrolytic condenser. To the right of this can, towards the center of the chassis is the RF transformer.

The 600 KC trimming condenser is accessible by means of a screw adjustment located on top of the chassis, to the right of the electrolytic condenser cans, between the cans and the RF transformer.

The 1400 KC line-up condensers are accessible through three holes in the bottom of the cabinet. With the cabinet tilted away from the operator and the rear of the chassis to the right of the operator, the extreme left hand hole is for the RF condensers, the middle hole for the detector condenser and the extreme right hand hole is for the oscillator condenser.

The IF transformer tuning condensers are accessible from the rear of the chassis. The two holes near the magnetic pickup terminal board are for the 2nd IF transformer. With the cabinet on its side, the upper hole is for the Primary circuit and the lower hole is for the Secondary circuit. The lower pair of holes, near the edge of the chassis are for the 1st IF transformer. The upper hole is for the Secondary circuit adjustment and the lower hole is for the Primary circuit adjustment.

The tone control can is opened by pressing with a pin or sharp instrument through the hole in the side of the can.

For 110 volt operation interchange the black and red lead with the folded over and tapped end, with the black with red-tracer lead connected to one of the terminals. When the change has been made tape up the black-red lead.

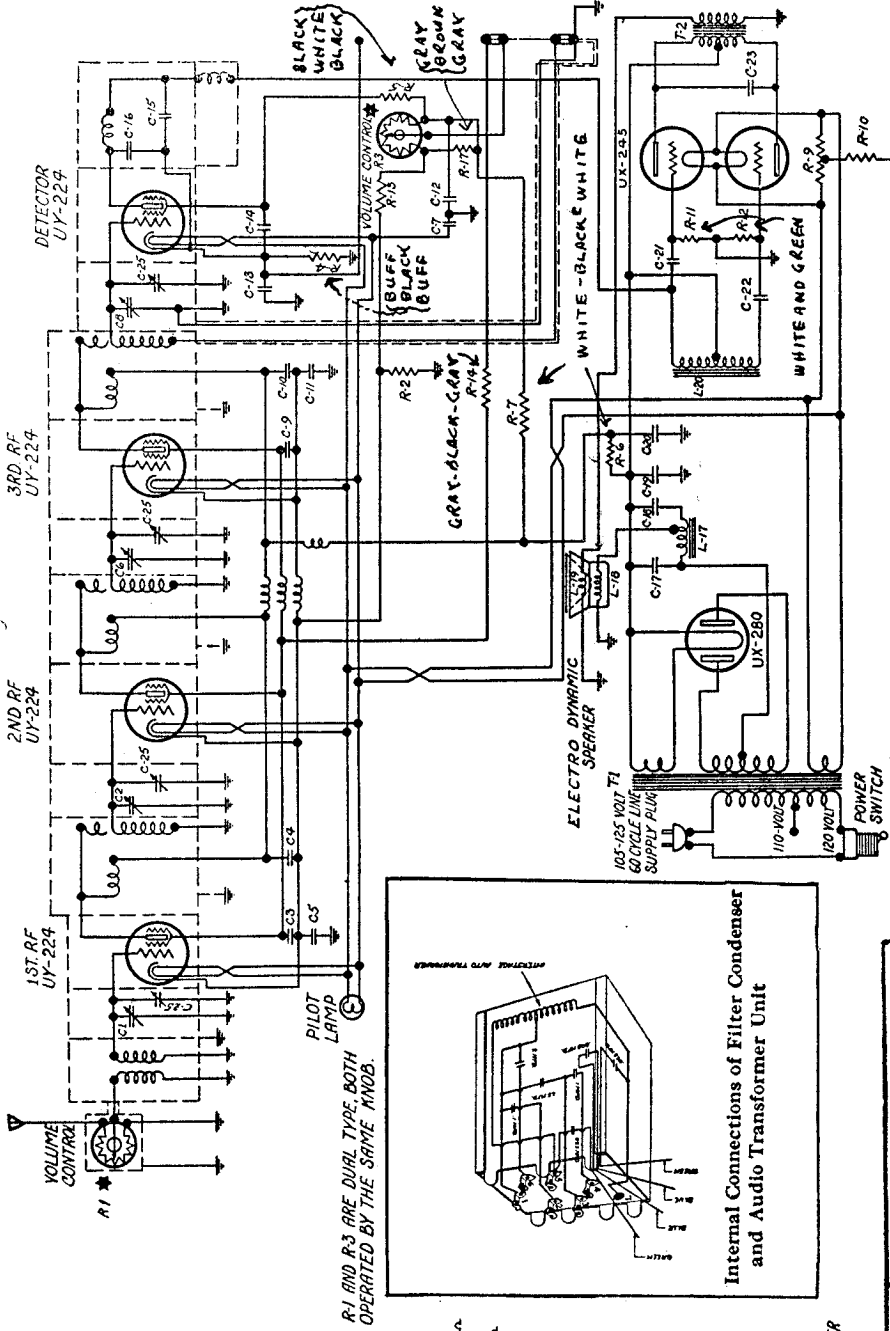
Volume Control Maximum

Tube	Cathode-Heater	Cathode-Grid	Cathode-Screen	Cathode-Plate	Plate Current	Fil.
RF	2.5	2.5	65	225	4.0 ma	2.4
Osc.	2.5	0.		55	5.0	2.4
1Det	5.0	5.0	60	215	0.5	2.4
IF	2.5	2.5	65	225	4.0	2.4
2Det	60.	*10.		200	0.5	2.4
AF		*20.		215	20.	2.4
AF		*20.		215	20.	2.4

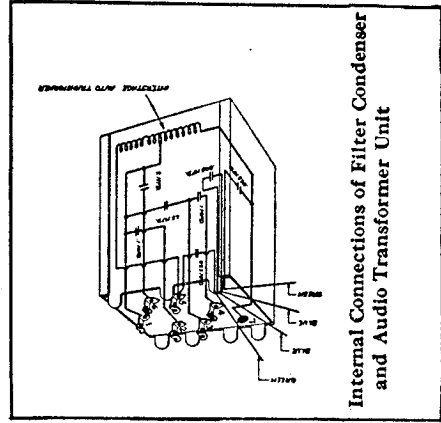
* Not true reading because of resistance in circuit.

R. C. A. VICTOR CO., INC.

MODEL Victor R-15
Schematic



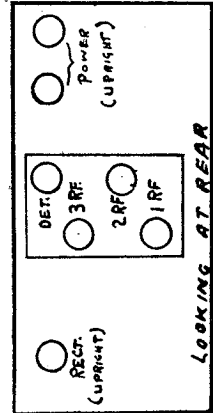
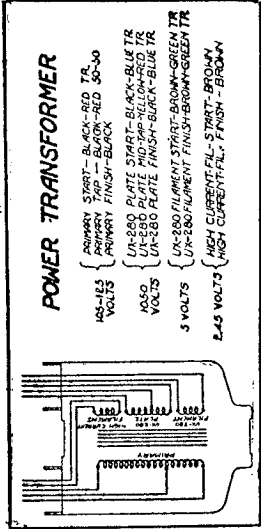
R-1 AND R-3 ARE DUAL TYPE, BOTH OPERATED BY THE SAME MIND.



Internal Connections of Filter Condenser and Audio Transformer Unit

Schematic Wiring Diagram, Victor Radio R-15

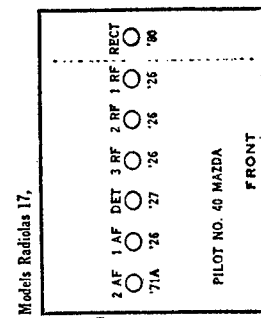
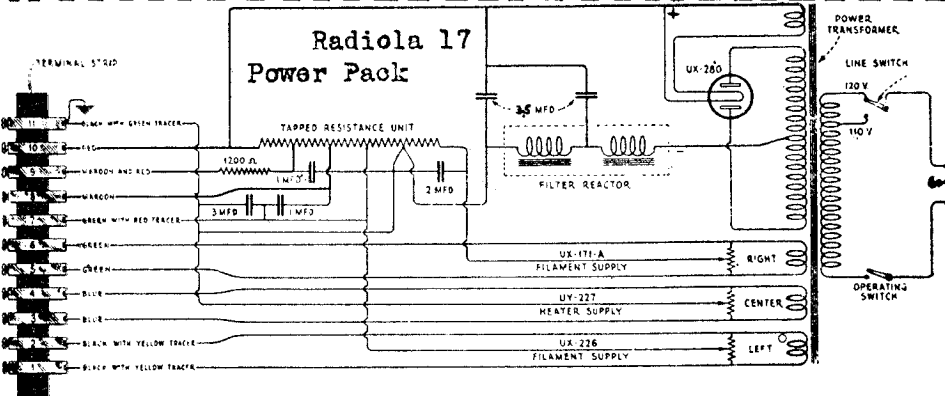
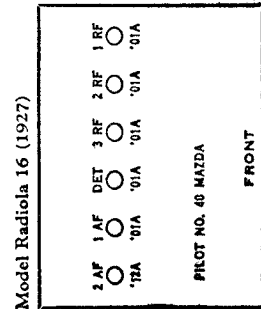
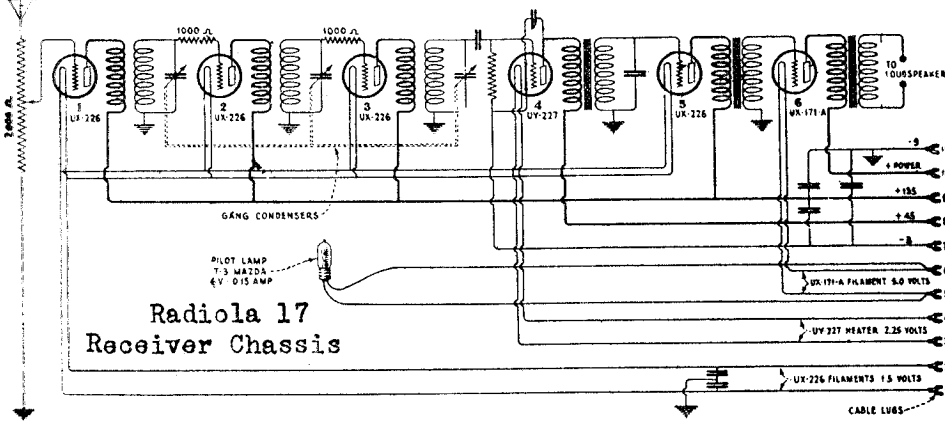
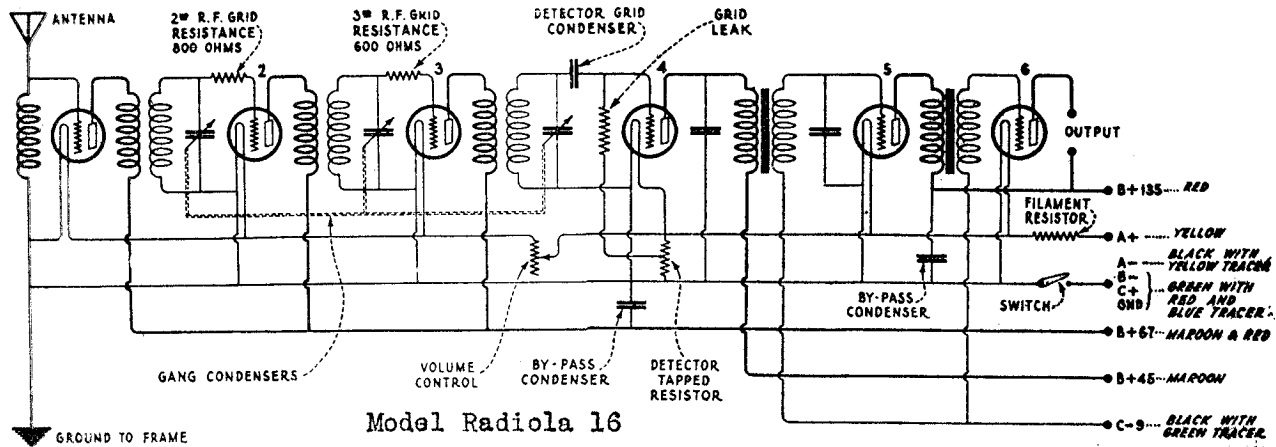
Tube	File V.	Plt. V.	Grd. V.	S	Grd. V.	Plt. Crnt.
1RF	2.1	153	2.7	78.	2.9	ma
2RF	2.1	154	2.7	77.	3.4	
3RF	2.1	152	2.8	75.	3.1	
Det	2.1	215	4.6	34.	0.4	
PPAF	2.05	190	4.5		25.	
Rect	4.1				Plate current each Plt.	\$6.



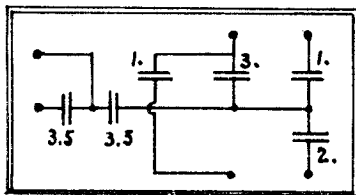
- C-1 TUNING CONDENSER
- C-2 TUNING CONDENSER
- C-3 0.1 MFD. CONDENSER
- C-4 0.1 MFD. CONDENSER
- C-5 0.1 MFD. CONDENSER
- C-6 TUNING CONDENSER
- C-7 0.1 MFD. CONDENSER
- C-8 TUNING CONDENSER
- C-9 0.1 MFD. CONDENSER
- C-10 0.1 MFD. CONDENSER
- C-11 0.1 MFD. CONDENSER
- C-12 0.1 MFD. CONDENSER
- C-13 .75 MFD. CONDENSER
- C-14 .25 MFD. CONDENSER
- C-15 320 MME CONDENSER
- C-16 320 MME CONDENSER
- C-17 0.1 MFD. CONDENSER
- C-18 20 MFD. CONDENSER
- C-19 1.5 MFD. CONDENSER
- C-20 1.0 MFD. CONDENSER
- C-21 .025 MFD. CONDENSER
- C-22 .025 MFD. CONDENSER
- C-23 .005 MFD. CONDENSER
- C-25 57015 MME ADJ. COND.
- R-1 VAR RESISTOR 50,000 Ω
- R-2 120 Ω RESISTOR
- R-3 VAR RESISTOR 50,000 Ω
- R-4 17,000 Ω RESISTOR
- R-5 200,000 Ω RESISTOR
- R-6 3,200 Ω RESISTOR
- R-7 3,200 Ω RESISTOR
- R-8 55 Ω RESISTOR
- R-9 55 Ω RESISTOR
- R-10 715 Ω RESISTOR
- R-11 430,000 RESISTOR
- R-12 430,000 RESISTOR
- R-13 830 Ω RESISTOR
- R-14 16,000 Ω RESISTOR
- R-17 12,000 Ω RESISTOR
- T-1 POWER TRANSFORMER
- T-2 OUTPUT TRANSFORMER
- L-17 FILTER REACTOR
- L-18 SPEAKER FIELD
- L-19 SPEAKER VOICE COIL
- L-20 INTERSTAGE TRANSFORMER

R. C. A. VICTOR CO., INC.

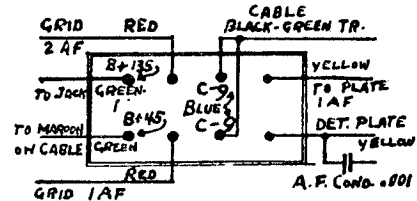
MODEL Radiola 16
MODEL Radiola 17



Internal Connections of filter condenser Radiola 17 Pack



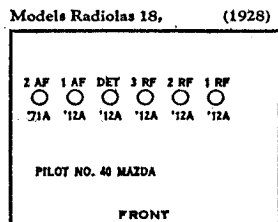
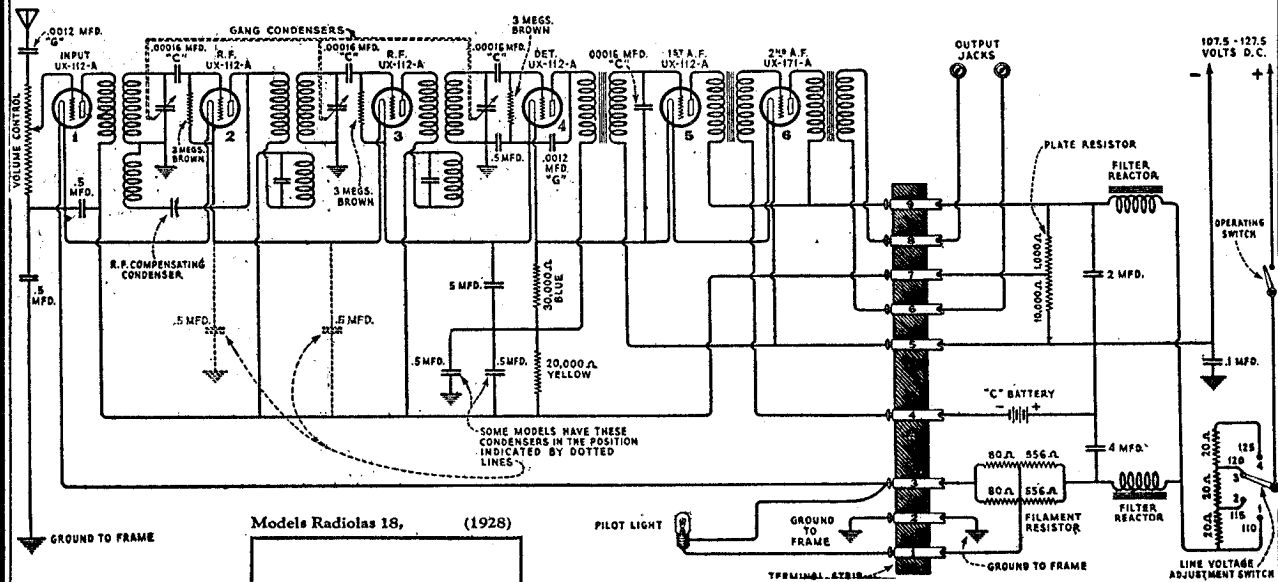
RADIOLA—Models 17
Line Voltage 112—120 Volt Tap—Volume Control Full



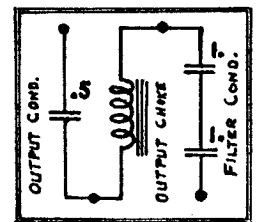
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE BY RT DET ETC	READINGS PLUG IN SOCKET OF SET								
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE MA	PLATE MA GRID TEST	PLATE MA CHANGE
1	226	1st. R.F.	1.4	125	1.3	122	8	4.5	8.5	4.0	
2	226	2nd. R.F.	1.4	125	1.3	122	8	4.5	8.5	4.0	
3	226	3rd. R.F.	1.4	125	1.3	122	8	4.5	8.5	4.0	
4	227	Detector	2.4	125	2.2	122	0	3.0	3.1	+1	
5	226	1st. A.F.	1.4	125	1.3	120	8	4.0	7.8	3.8	
6	171A	2nd. A.F.	4.9	200	4.7	132	30	16.0	16.0	2.0	
7	220	Rectifier	-	-	-	-	-	20.0	-	-	

MODEL Radiola 18 DC
MODEL Radiola 18 AC

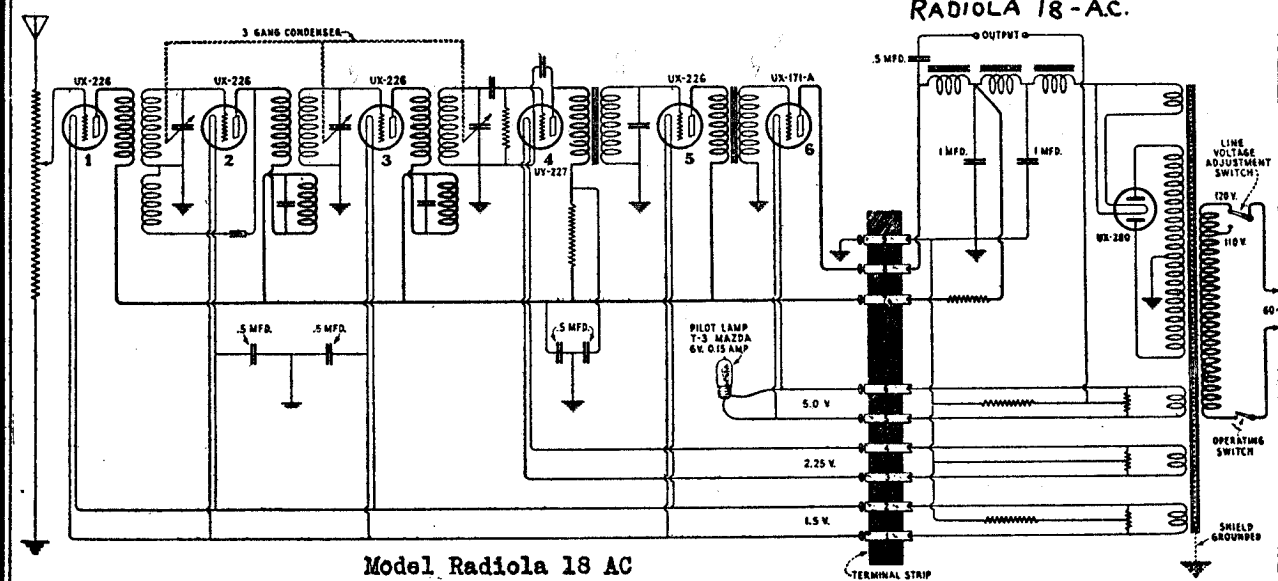
R. C. A. VICTOR CO., INC.



Model Radiola 18 DC

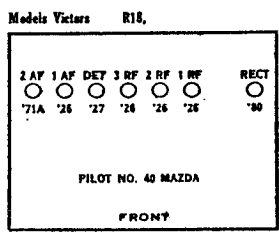


RADIOLA 18-AC.



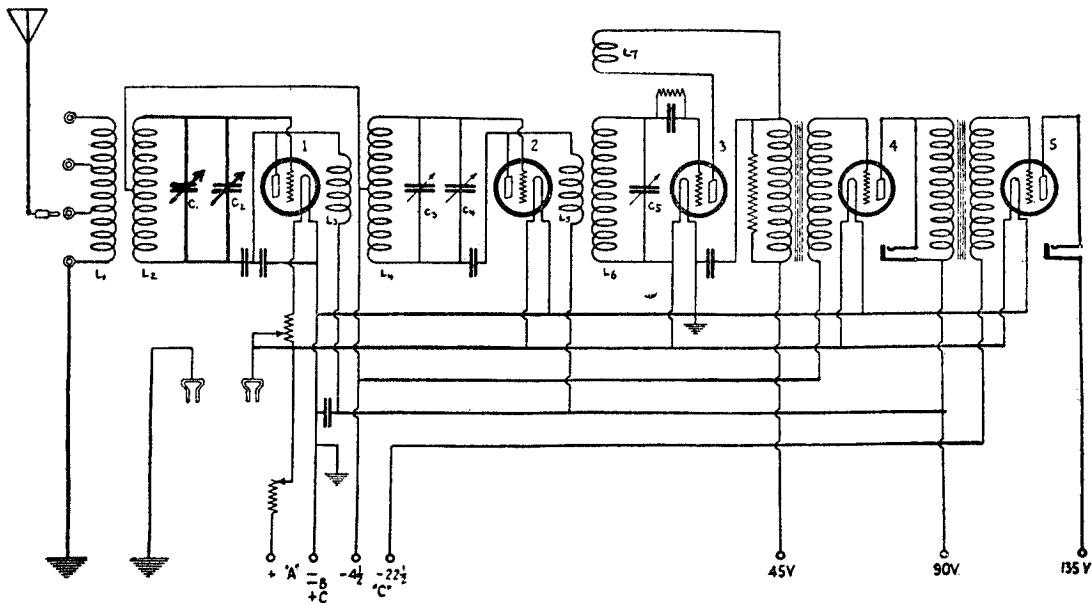
Model Radiola 18 AC

Model 18 D.C.	Tube No.	Fil. to Grid Volts	Fil. to Plate Volts	Plate Ma.	Fil. Volts
	1	5	45	4.5	4.7
	2	4	50	5.	4.8
	3	4	55	5.5	5.
	4	4	21	1.	5.1
	5	10	90	3.5	5.2
	6	22.5	90	10.	5.3

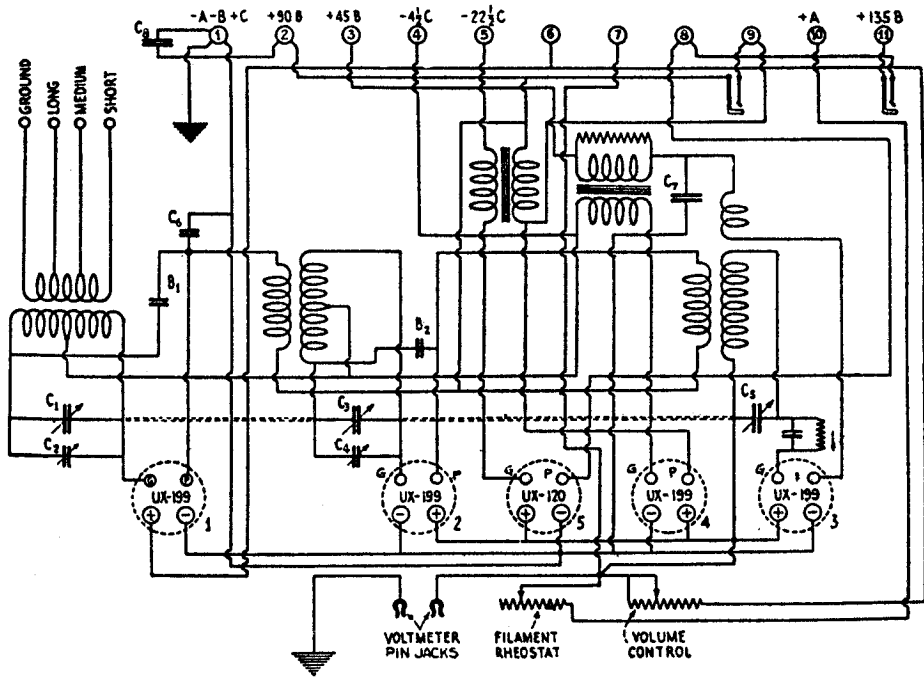


MODEL Radiola 20

R. C. A. VICTOR CO., INC.

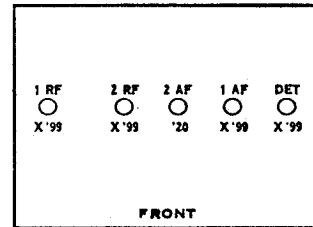


Radiola 20.



Continuity Diagram of the Radiola 20

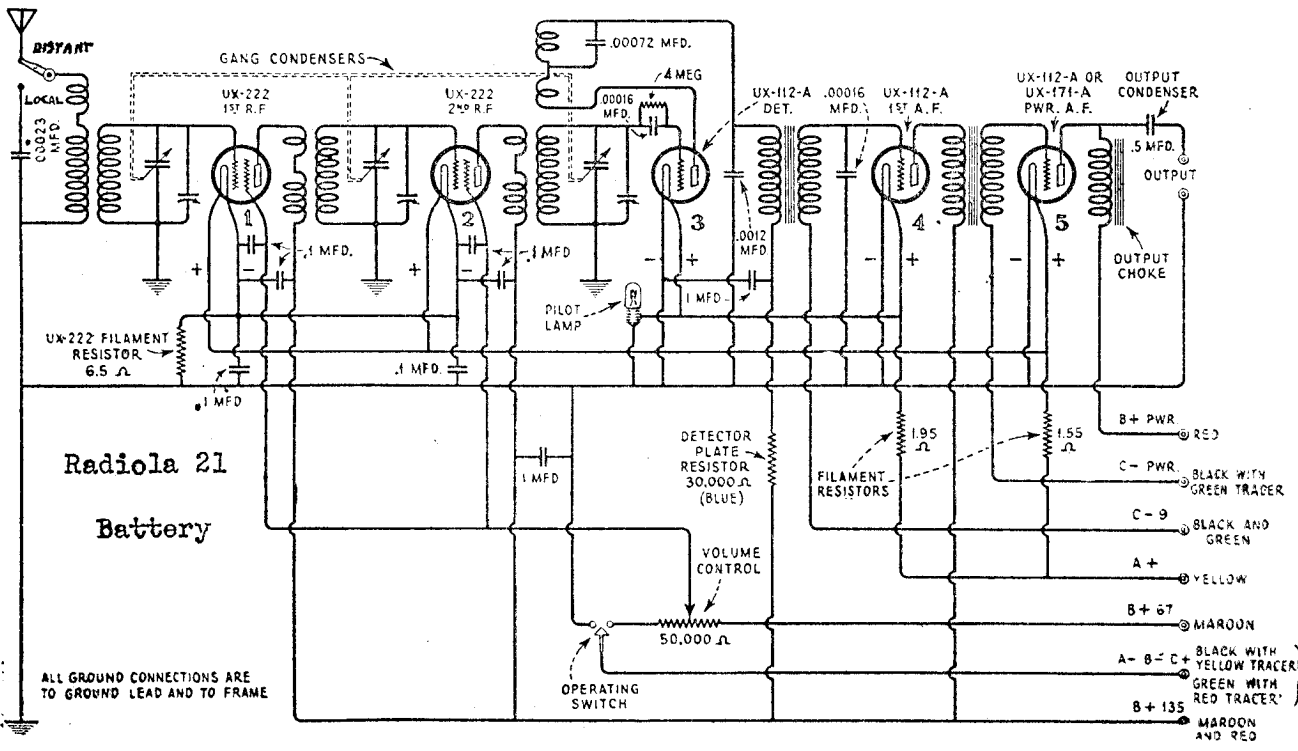
Model Radiola 20 (1925)



- | | |
|--------------|-----------------------------|
| B plus 135 | Red |
| B plus 90 | Maroon and Red |
| B plus 45 | Maroon |
| A- B- C plus | Green and Yellow-Red Tracer |
| -4.5 | Black and Green |
| -22.5 | Black with Green Tracer |
| A plus | Yellow |

R. C. A. VICTOR CO., INC.

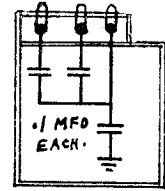
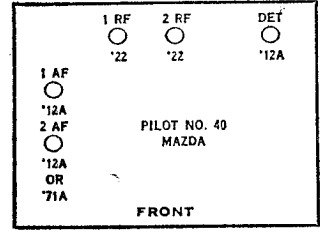
MODEL Radiola 21, 22



Radiola 21
Battery

ALL GROUND CONNECTIONS ARE TO GROUND LEAD AND TO FRAME

Models Radiolas 21, 22 (1929)



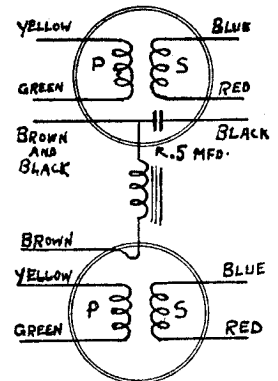
RP Bypass Unit

RADIOLA—Models 21 and 22
Volume Control at Minimum

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES					MILLIAMPERES				
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID SPACE	NORMAL GRID SCREEN	CATHODE TO HEATER	SCREEN GRID TO HEATER	SCREEN GRID TO PLATE	PLATE TO HEATER	TUBE TEST	PLATE CURRENT CHANGE
1	222	1 R.F.	3.2	135	1.6	0	-	-	0			
2	222	2 R.F.	3.2	135	1.6	0	-	-	0			
3	112A	Det.	5.0	45	-	-	-	-	3.5			
4	112A	1 A.F.	5.0	125	-	9	-	-	6.5			
5	171A	PWR	5.0	130	-	27	-	-	15			
6												
7												

Volume Control at Maximum

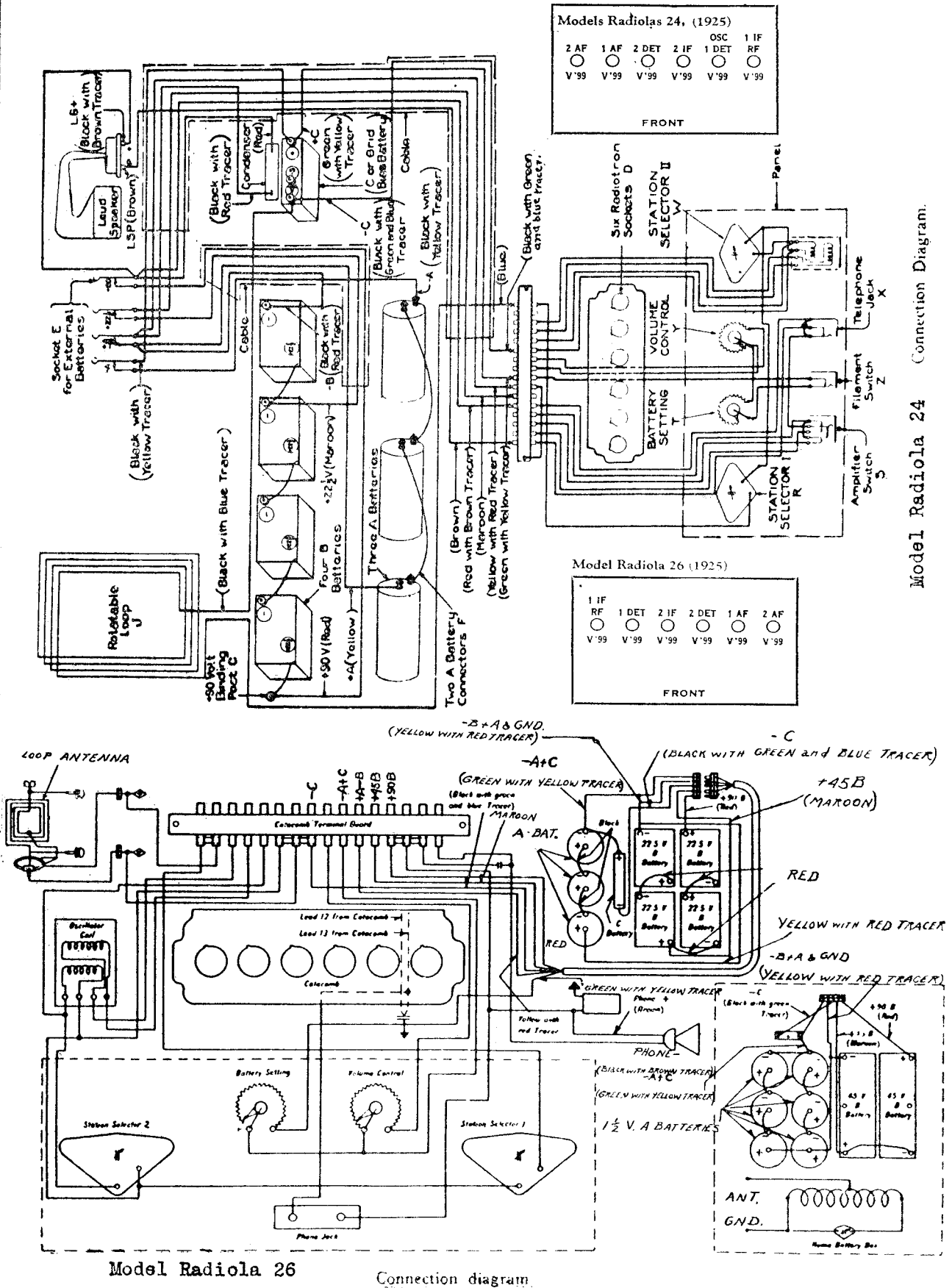
TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES					MILLIAMPERES				
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID SPACE	NORMAL GRID SCREEN	CATHODE TO HEATER	SCREEN GRID TO HEATER	SCREEN GRID TO PLATE	PLATE TO HEATER	TUBE TEST	PLATE CURRENT CHANGE
1	222	1 R.F.	3.2	135	1.6	67	-	-	5.0			
2	222	2 R.F.	3.2	135	1.6	67	-	-	5.0			
3	112A	Det.	5.0	45	-	-	-	-	3.5			
4	112A	1 A.F.	5.0	125	-	9	-	-	6.5			
5	171A	PWR	5.0	130	-	27	-	-	15			
6												
7												



Internal connections of A-F coupling unit.

R. C. A. VICTOR CO., INC.

MODEL Radiola 24
MODEL Radiola 26



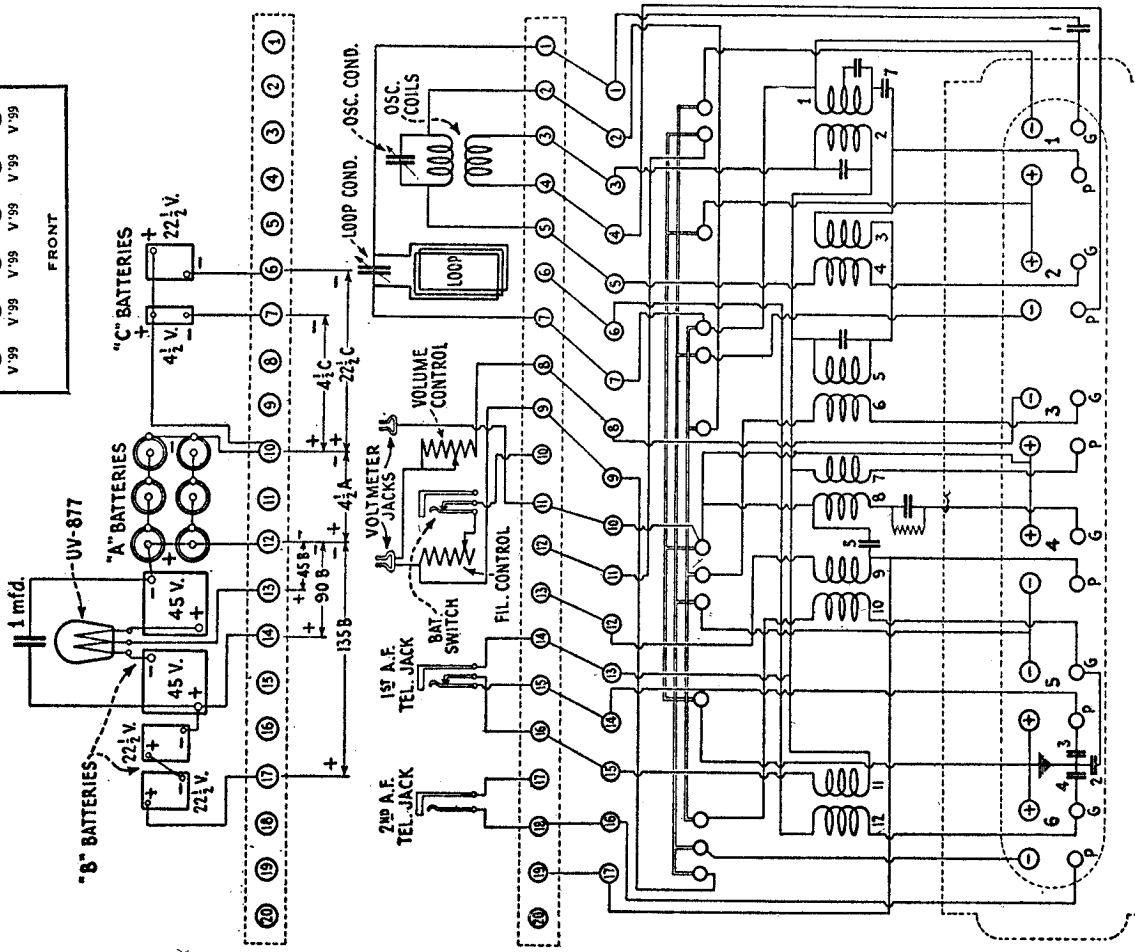
MODEL Radiola 25

R. C. A. VICTOR CO., INC.

Models Radiolas 24, 25 (1925)

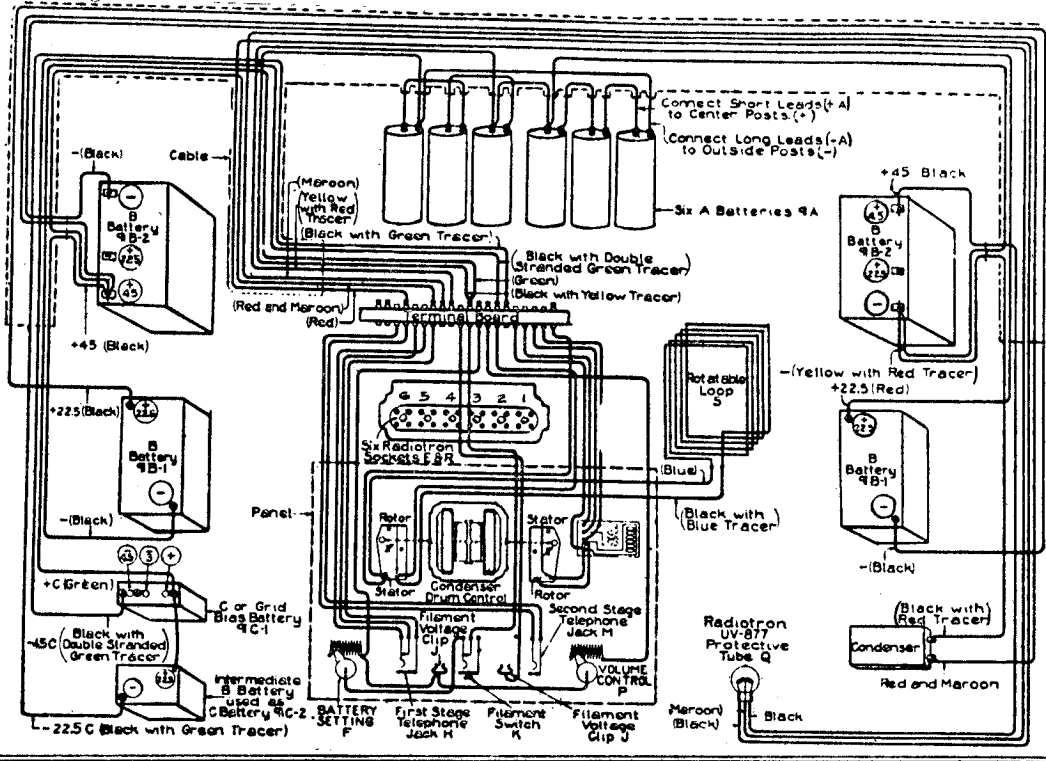
OSC	1 IF
1 AF	2 DET
2 AF	2 IF
V 99	V 99
V 99	V 99
V 99	V 99
V 99	V 99
V 99	V 99
V 99	V 99
V 99	V 99

FRONT



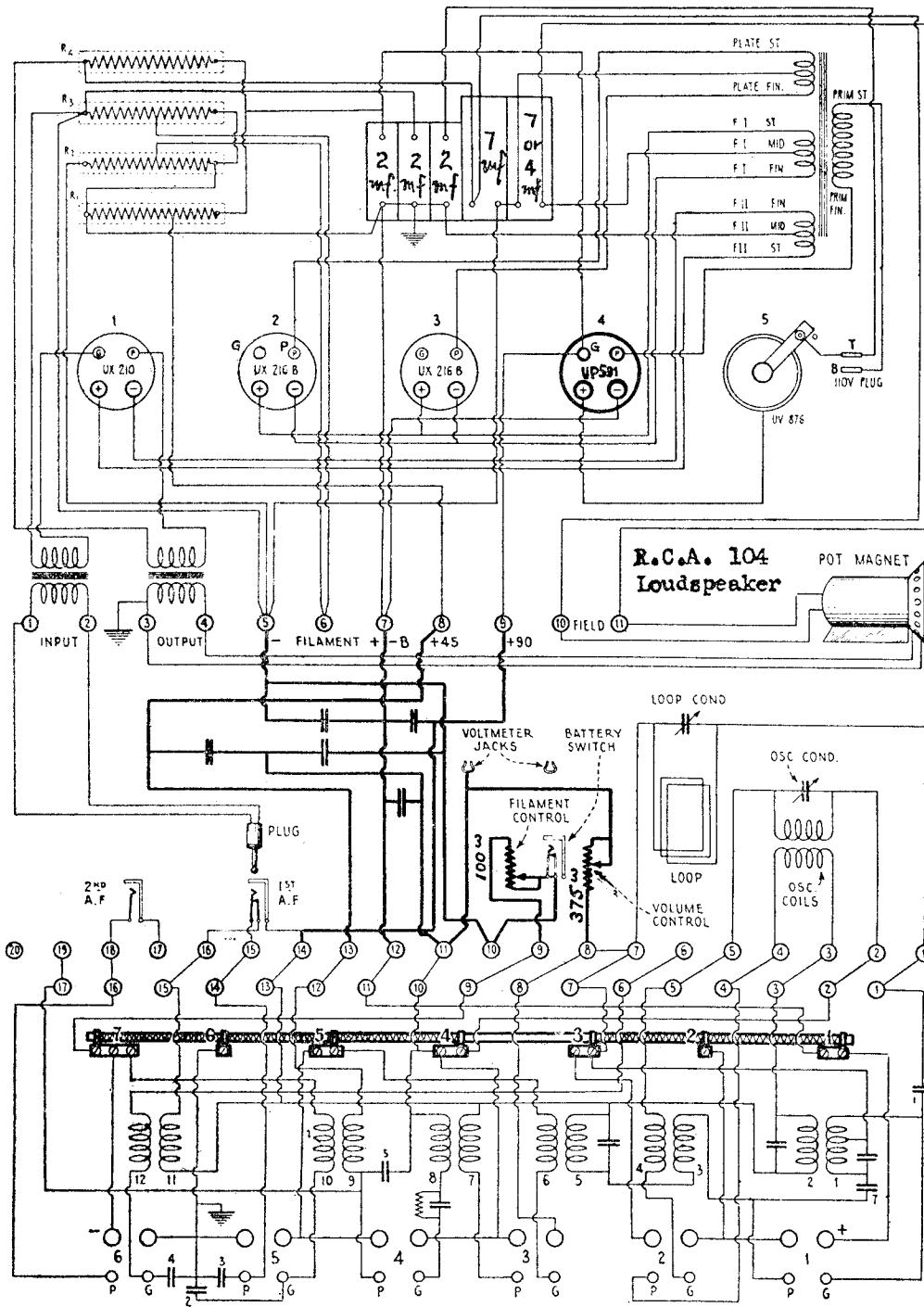
VOLTAGE READINGS TAKEN AT CATA-COMB TERMINAL STRIP

VOLTS	+ TERMINAL	- TERMINAL
135B	17	12
90B	14	12
45B	13	6
22½C	20	7
4½C	20	10
4¼A	12	



R. C. A. VICTOR CO., INC.

MODEL Radiola 25
With 104 Power Pack



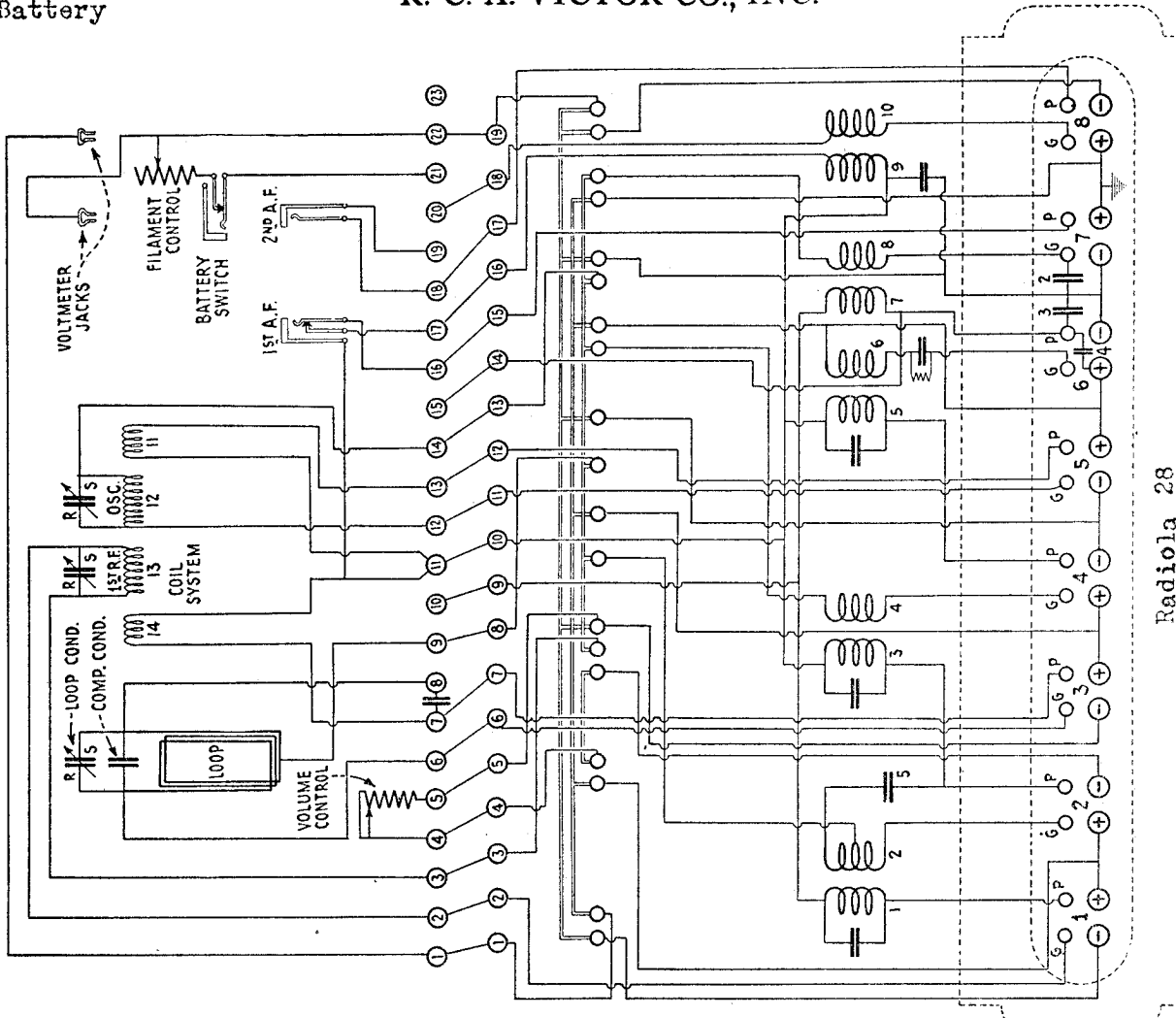
VOLTAGE READINGS OF RADIOIA 25
 31 volts with tubes lighted
 21.5 " normal
 41 volts normal
 Between terminals 10 and 12
 12 " 13
 13 " 14

RADIOIA 25 A.C. RESISTANCES			
Terminals	Lower limit	Normal	Upper limit
1 and 2	218.5 V.	230 V.	241.5 V.
2 and 3	192 "	201 "	208 "
3 and 4	open	open	open "
4 and 5	151.9 "	155 "	158.1 "
5 and 6	143 "	150 "	153 "
6 and 7	44.75 "	50 "	55.25 "

RADIOIA 25
A.C. OPERATED
 With
 Model 104 Loudspeaker
 and Model UP-971 A.C.
 Package.
 (A.C.Package Changes
 Shown In Heavy Lines.)

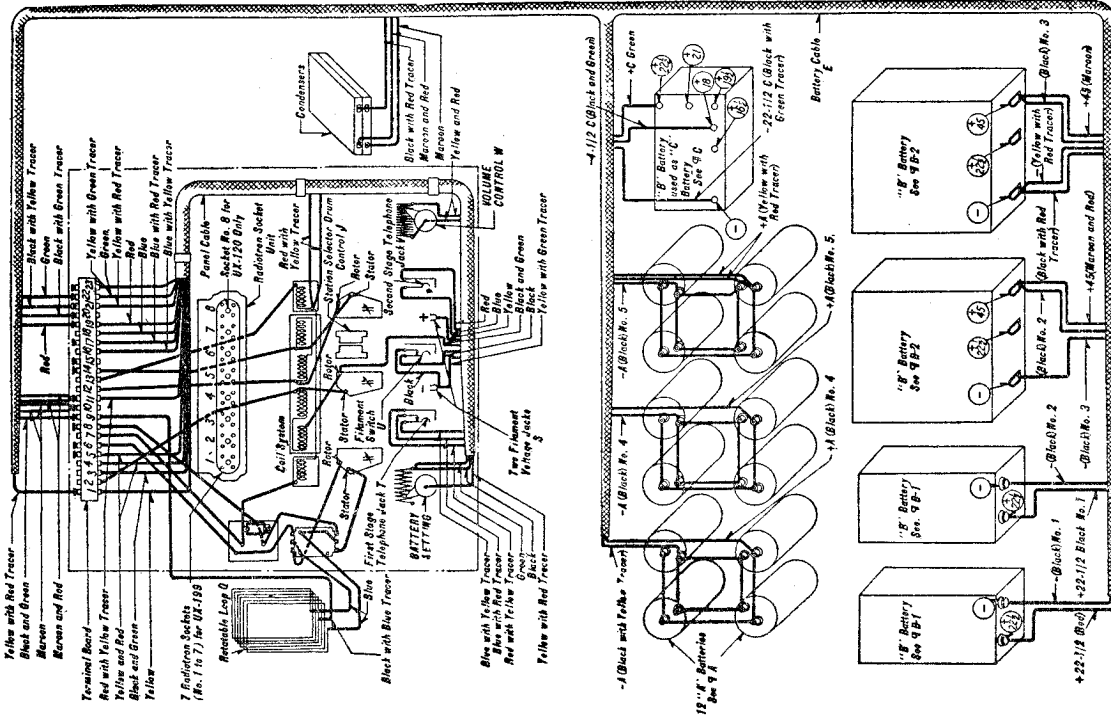
MODEL Radiola 28
Battery

R. C. A. VICTOR CO., INC.



Radiola 28

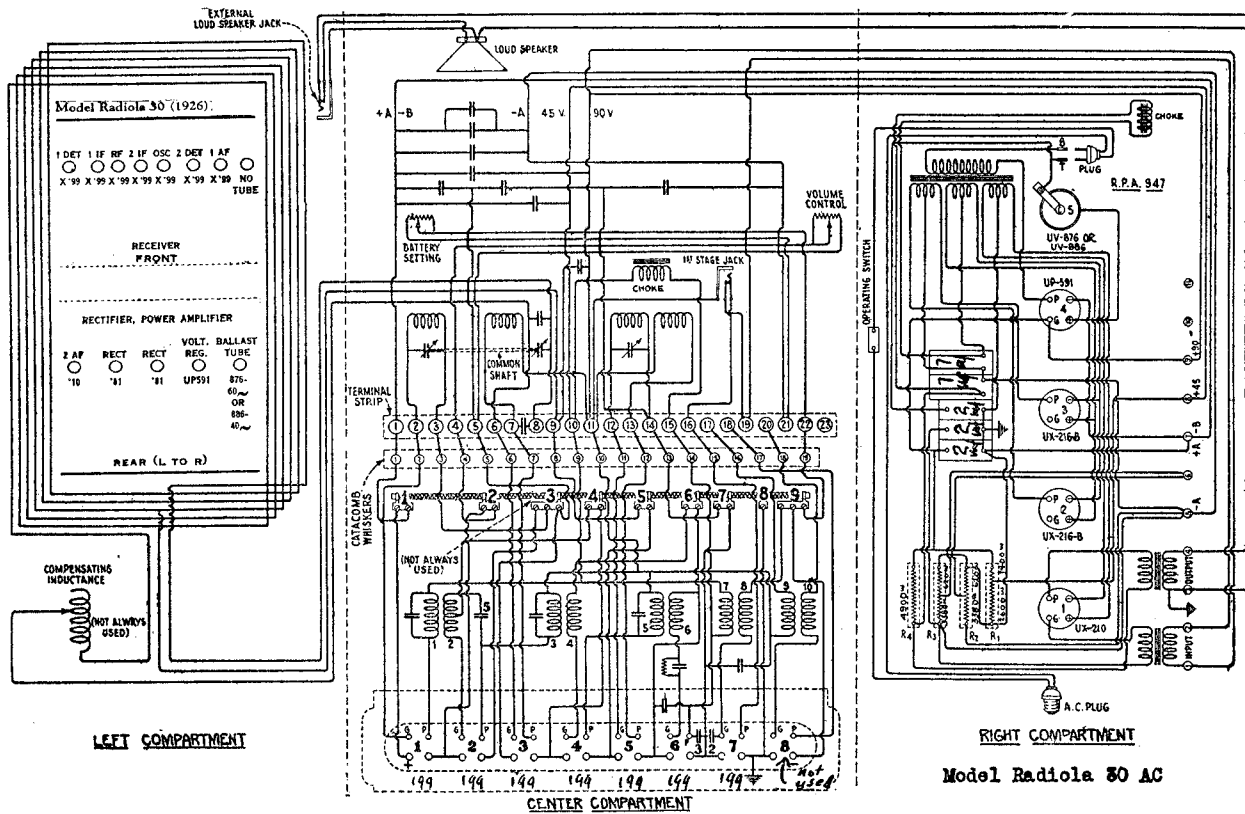
IF PEAK 40 KC.



WIRING DIAGRAM FOR RADIO 28
In this wiring diagram, two or more leads of a like color contained in the same cable may be distinguished by the numeral following the color designation at each end of a given lead.

MODEL Radiola 30 AC
With 104 Power Pack

R. C. A. VICTOR CO., INC.



LEFT COMPARTMENT

CENTER COMPARTMENT

RIGHT COMPARTMENT

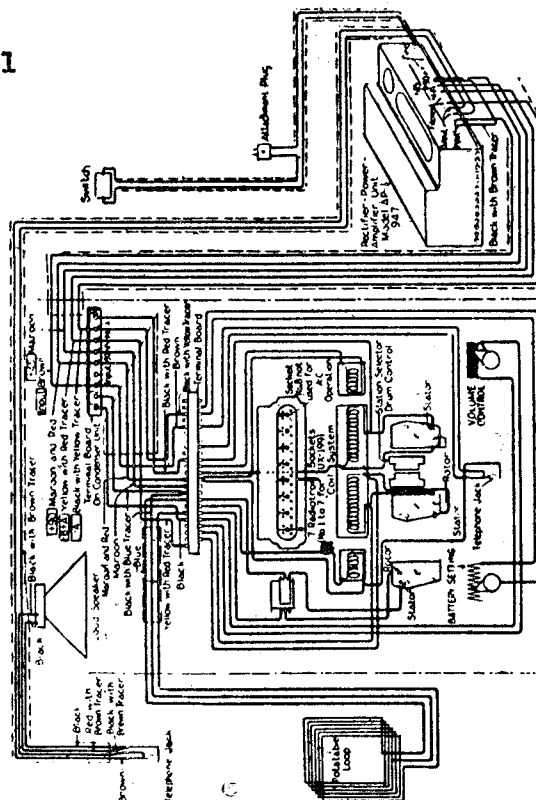
Model Radiola 30 AC

RESISTANCES AT RESISTANCE STRIP
with 375 ohm volume control

Terminals	Low	Normal	High
1 and 2	185	190	195
2 and 3	350	400	450
3 and 4	158	163	168
4 and 5	150	155	160
5 and 6	125	130	135
6 and 7	116	120	124
7 and 8	111	115	119
8 and 9	45	50	55

RESISTANCES AT RESISTANCE STRIP
with 250 Volume Control

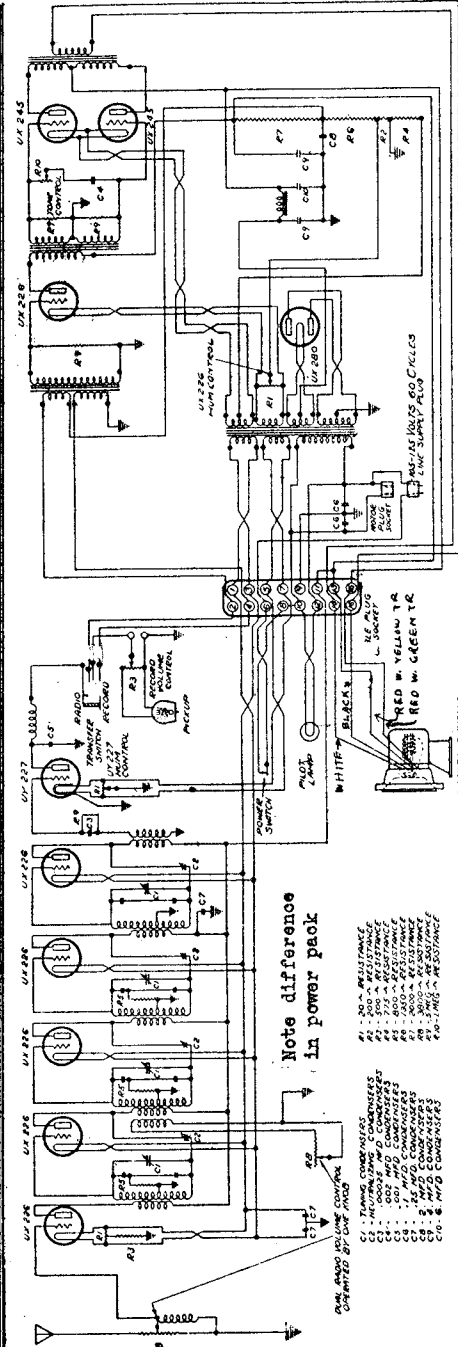
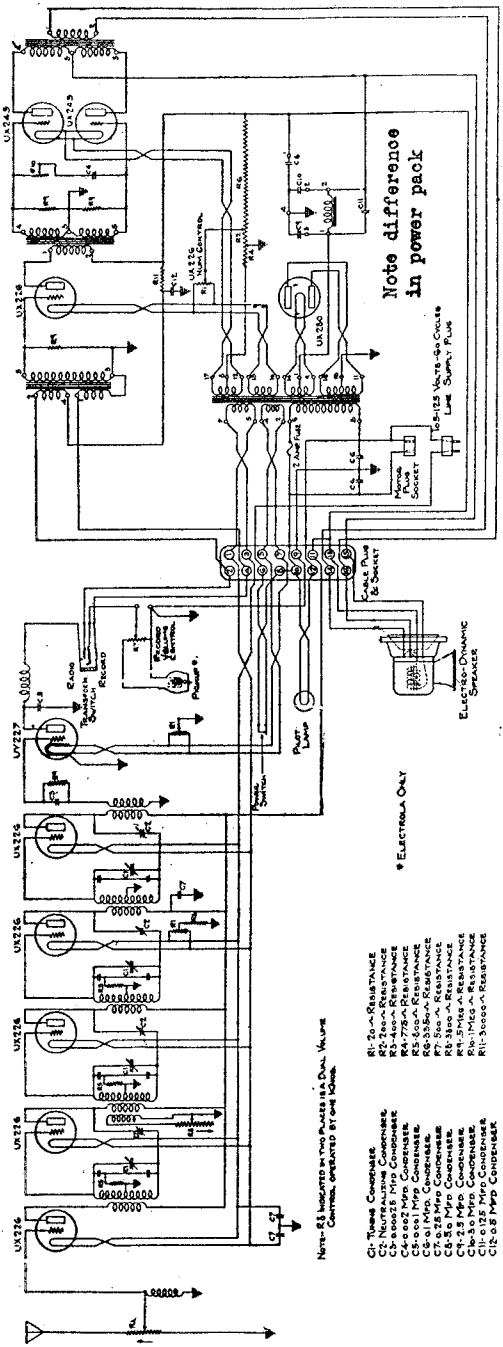
Terminals	Low	Normal	High
1 and 2	260	271	282
2 and 3	open	open	open
3 and 4	230	236.5	243
4 and 5	191	197	203
5 and 6	176	183.5	191
6 and 7	146	154.5	163
7 and 8	137	145.5	154
8 and 9	45	50.	55



Schematic Wiring Diagram of Radiola 30.

MODEL Victor R-32,
RE-45 and R-52

R. C. A. VICTOR CO., INC.

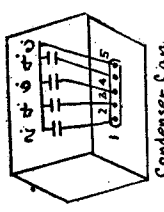


CABLE TERMINAL VOLTAGES

- Between 1 and 3 1.7 volts AC.
- 5 and 7 2.35volts AC.
- 2 and 9 39. volts DC.
- 9 and 11 108. volts DC.
- 13 and 15 185. volts DC.

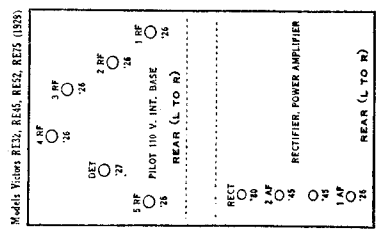
MULTI-PLUG TERMINALS

- #1. Brown-white tracer for 226 filament. #2. Blue for transfer switch.
- #3. Brown-white tracer for 226 filament. #4. White for transfer switch.
- #5. Brown-blue tracer for 227 filament. #6. Black-red tracer for power switch.
- #7. Brown-blue tracer for 227 filament. #8. Black-red tracer for power switch.
- #9. Braided copper shield to ground. #10. Brown-red tracer for pilot light.
- #11. Red-yellow tracer -B of 226. #12. Brown-red tracer for pilot light.
- #13. Red-yellow tracer for field. #14. White for voice coil. #15. Red-green tracer for speaker field. #16. Black for voice coil.



VICTOR—Model R-32
Line Voltage 115—Volume Control Position Max
*Antenna Coupling Stage

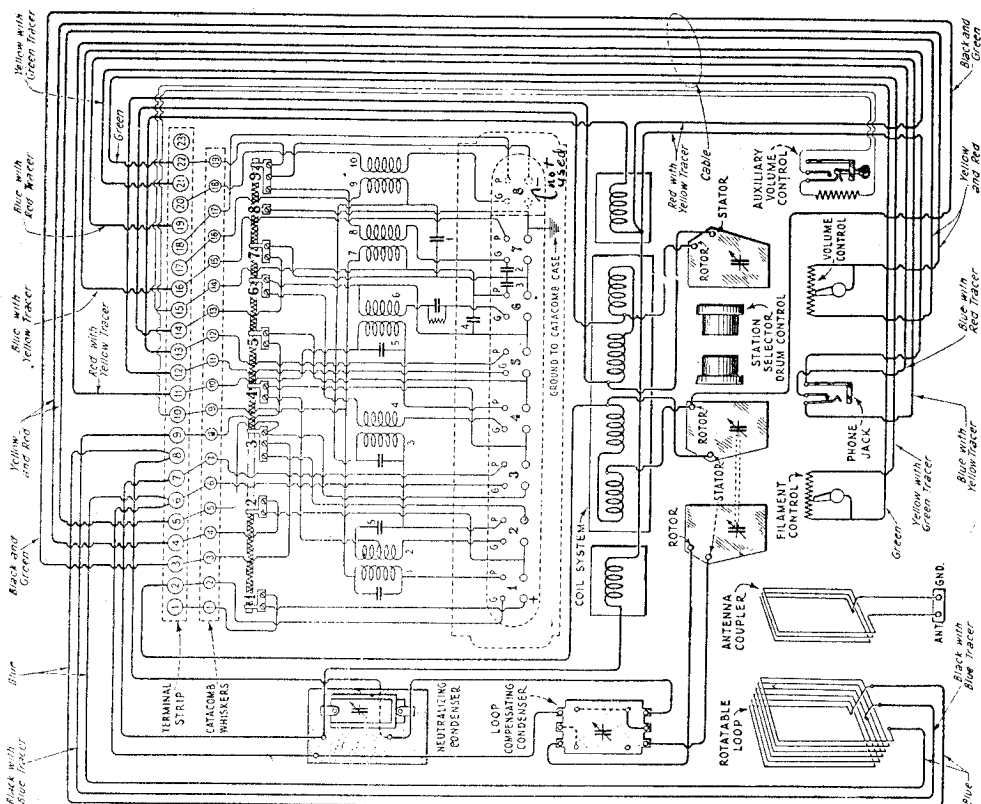
TYPE	POSITION OF WIRE	TURNS	RESISTANCE PLUG IN IDEALLY SET		TURNS IN TESTER		RESISTANCE	CAPACITANCE	INDUCTIVE REACTANCE	CAPACITIVE REACTANCE	IMPEDANCE	ADJUSTMENT
			Ω	Ω	Ω	Ω						
226	1st RP	1.5	112	1.4	112	0	2.5	6.6	3.0	-	-	-
226	2nd RP	1.5	112	1.4	112	0	2.5	6.6	3.0	-	-	-
226	3rd RP	1.5	112	1.4	112	0	2.5	6.6	3.0	-	-	-
226	4th RP	1.5	112	1.4	112	0	2.5	6.6	3.0	-	-	-
227	DET.	2.45	5.2	2.3	44	0	1.2	1.2	0	-	-	-
226	1st A	1.5	114	1.4	100	0	2.5	6.2	2.8	-	-	-
245	2nd A	2.4	260	2.3	240	0	1.2	1.2	0	-	-	-
245	2nd A	2.4	260	2.3	240	0	1.2	1.2	0	-	-	-
260	DET.	5	4.4	0	0	0	0	0	0	-	-	-



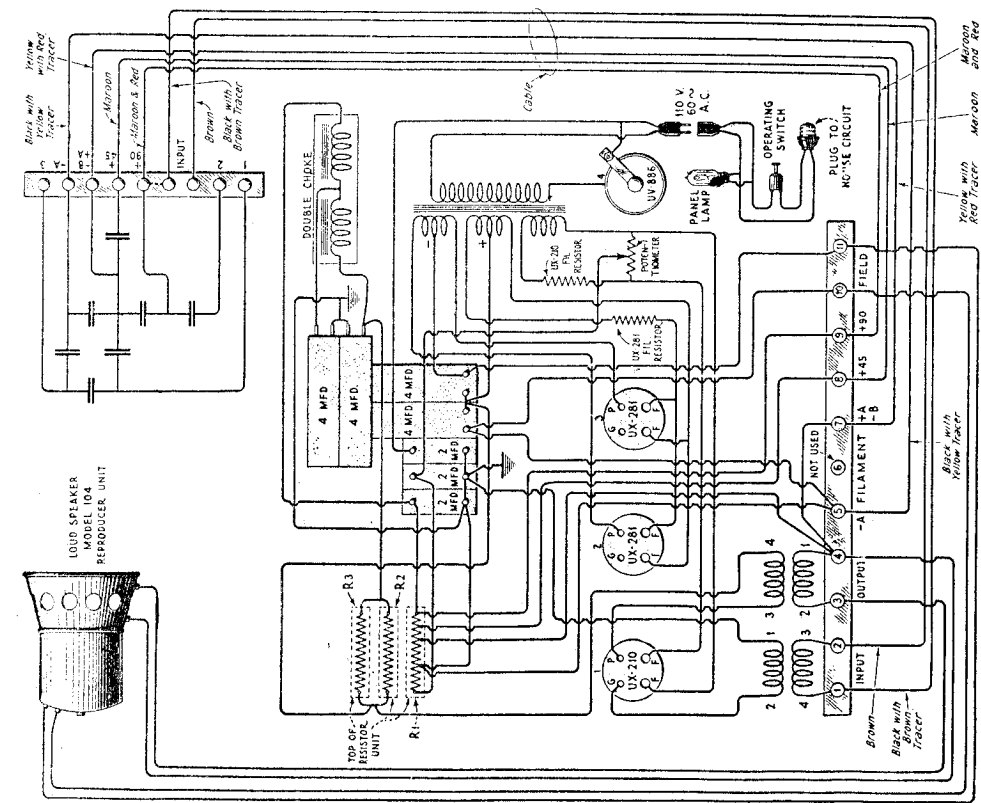
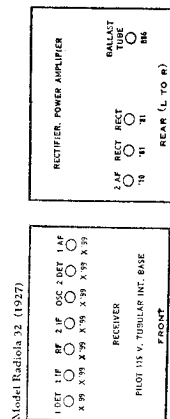
Model Values FEEL, REG, REG, REG, REG (1935)

R. C. A. VICTOR CO., INC.

MODEL Radiola 32 AC



Model Radiola 32



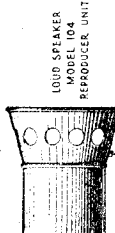
Model Radiola 32 AC Power Pack

DC Resistance of Resistor Strip

Between Terminals 1 and 2 271 ohms

2 and 3	Open
3 and 4	236.5
4 and 5	197
5 and 6	183.5
6 and 7	154.5
7 and 8	145.5
8 and 9	50

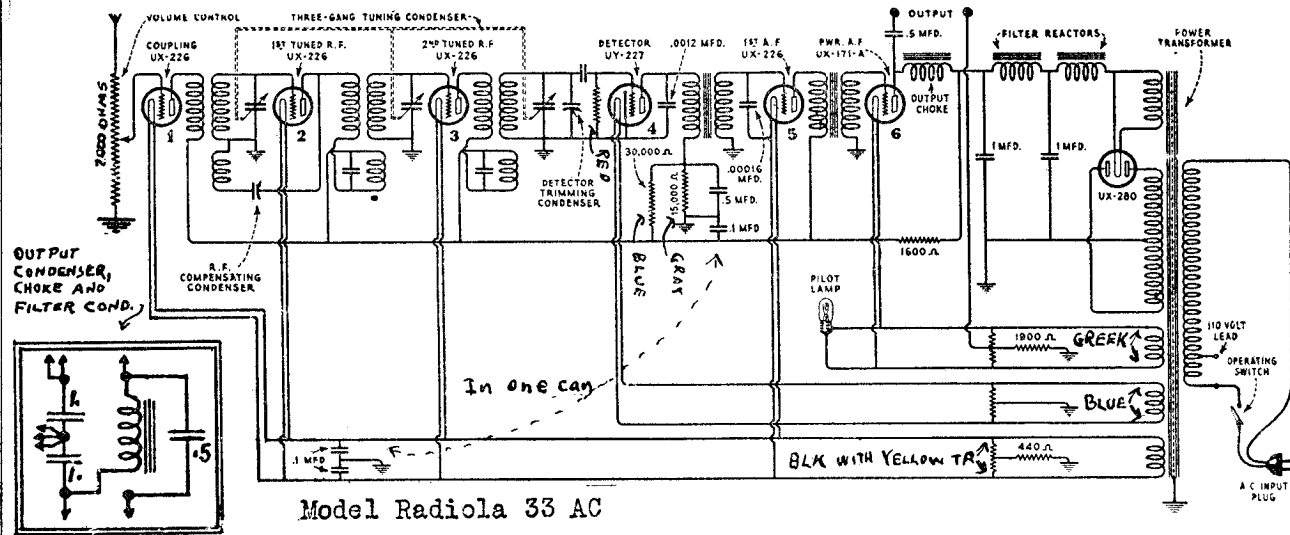
RADIOA-Model 32
Resistors are approximately the same as on model 30A except 210 and 281. The plate voltage of the 210 tube is 425 volts, normal milliamperes 22, grid test 42, indicating a change of 20 M.A. The output of rectifier tubes is approximately 60 M.A. each.



LOUD SPEAKER MODEL 104 REPRODUCING UNIT

MODEL Radiola 33 AC
MODEL Radiola 33 DC

R. C. A. VICTOR CO., INC.



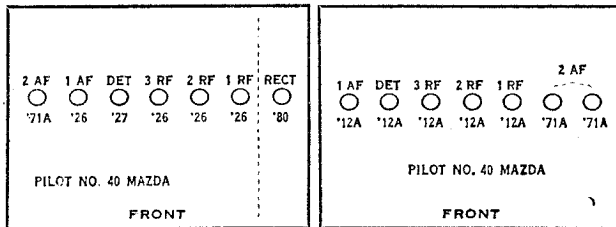
Model Radiola 33 AC

Output condenser, choke and filter condenser.

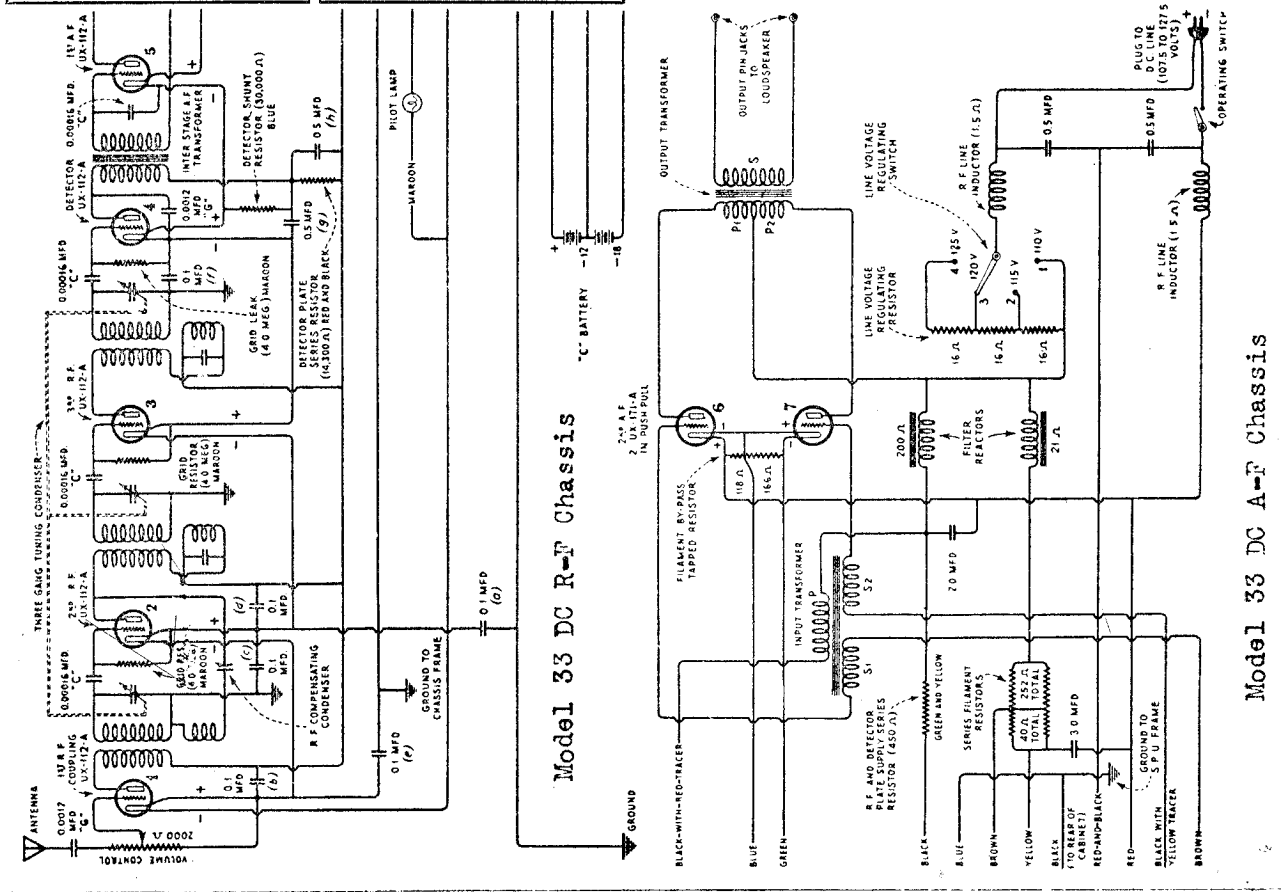
RADIOLA—Model—33 A.C.

Line Voltage 112—120 Volt Tap—Volume Control Full

Models Radiolas 33, (1927) Model Radiola 33 DC (1929)



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (BY R.F. DET ETC)	READINGS PLUG IN SOCKET OF SET								
			TUBE OUT				TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE MA. GRID TEST	PLATE MA. CHANGE	PLATE MA. CHANGE
1	226	1st. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0
2	226	2nd. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0
3	226	3rd. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0
4	227	Detector	2.4	125	2.2	122	8		4.0	7.5	3.0
5	226	1st. A.F.	1.4	125	1.3	120	8		4.0	7.5	3.0
6	171A	2nd. A.F.	4.9	200	4.7	132	30		16.0	16.0	2.0
7	260	Rectifier			4.8				20.0		

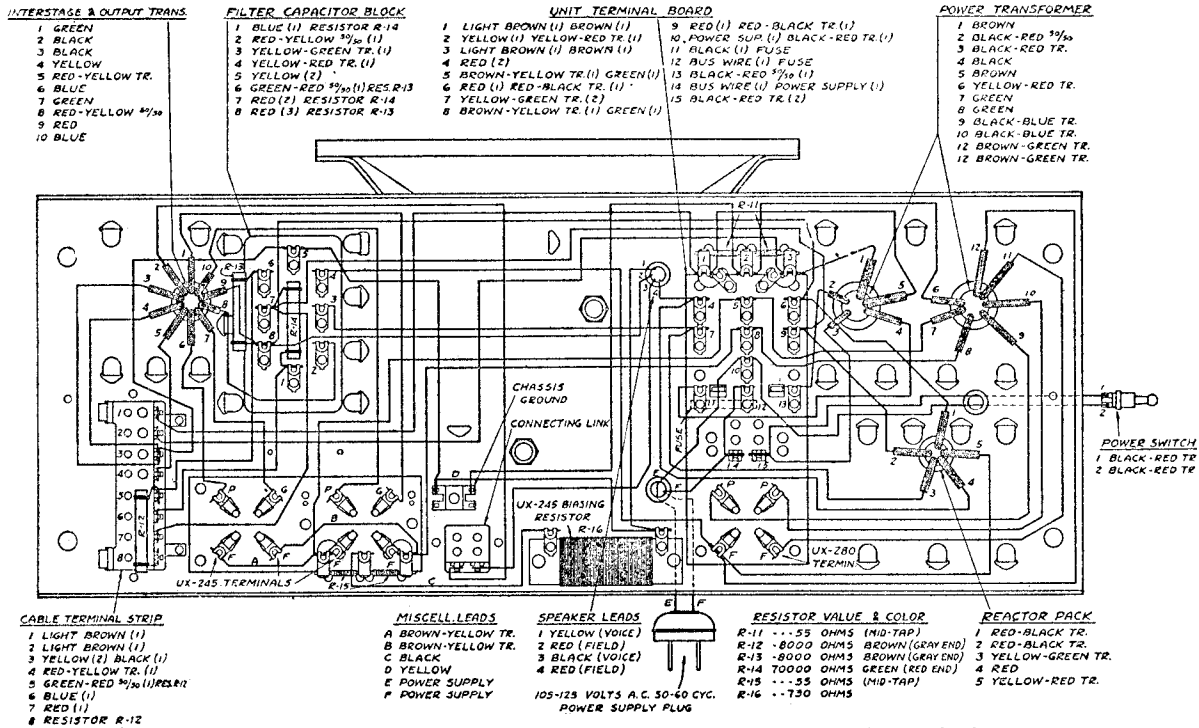


Model 33 DC R-F Chassis

Model 33 DC A-F Chassis

R. C. A. VICTOR CO., INC.

MODEL Victor R-35, R-39,
RE-57
A-F Chassis, Voltage

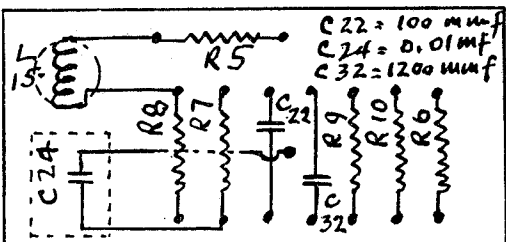
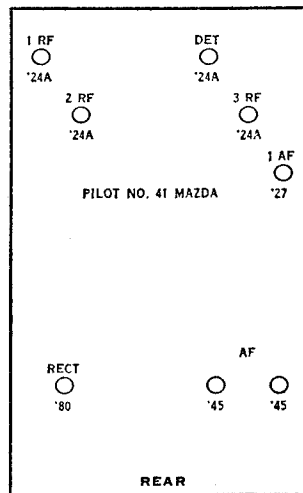


Bottom View of Amplifier-Speaker Unit, showing Wiring between Terminals.

VICTOR—Model "Micro-Synchronous"
Line Voltage 112—Voltage Tap 120—Volume Control Full

TUBE NO IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES					MILLIAMPERES				
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID-SPACE	NORMAL GRID-SPACE	CATHODE TO HEATER	SCREEN GRID TO HEATER	PLATE R. H. '80	PLATE R. H. '80	TUBE TEST	PLATE CURRENT CHANGE
1	22A	1 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5	
2	22A	2 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5	
3	22A	3 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5	
4	22A	Det.	2.15	75*	-	2.5	8	-	-	-	-	
5	227	1 A.F.	2.15	55	-	0	-	-	1.5	1.8	.3	
6	245	PP-AF	2.25	185	-	36	-	-	19	22	3.0	
7	245	PP-AF	2.25	185	-	36	-	-	19	22	3.0	
8	280	-	4.8	-	-	-	-	-	36	36	-	

Models Victors R34, R35, R39, RE57, RE73 (1930)

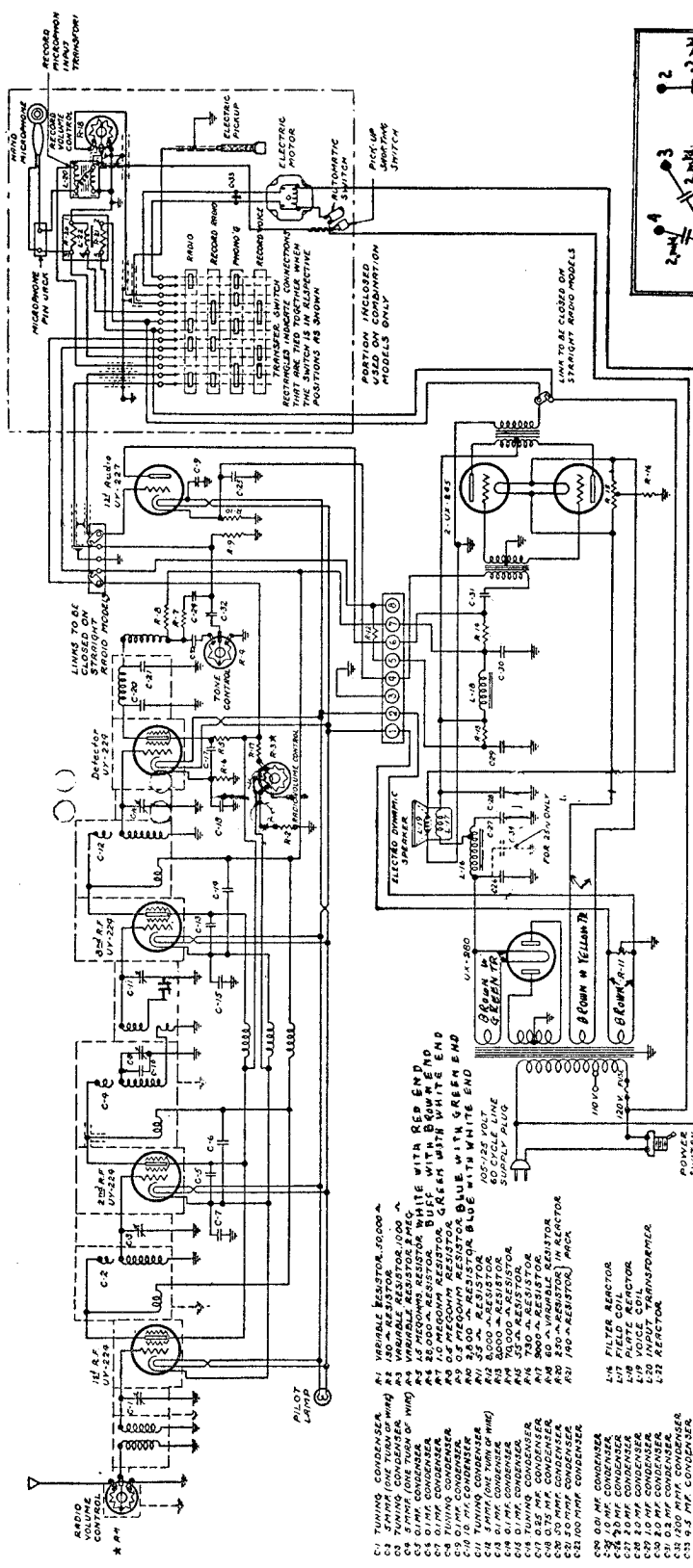


Resistor board on radio chassis.

VOLTAGES ACROSS AMPLIFIER TERMINAL STRIP

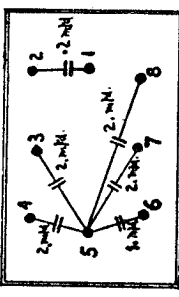
Between 1 and 2 2.6 volts AC
3 and 7 300. volts DC (The radio chassis is disconnected during these tests)
3 and 6 275. volts DC
3 and 8 295. volts DC

MODEL Victor R-35, R-39, RE-57, R. C. A. VICTOR CO., INC.
Schematic



- C1 TUNING CONDENSER
- C2 75MMF (ONE TURN OF WIND)
- C3 5MMF (ONE TURN OF WIND)
- C4 5MMF (ONE TURN OF WIND)
- C5 0.1MF CONDENSER
- C6 0.1MF CONDENSER
- C7 0.1MF CONDENSER
- C8 0.1MF CONDENSER
- C9 0.1MF CONDENSER
- C10 0.1MF CONDENSER
- C11 0.1MF CONDENSER
- C12 0.1MF CONDENSER
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- C14 0.1MF CONDENSER
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- C30 0.1MF CONDENSER
- C31 0.1MF CONDENSER
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- C41 0.1MF CONDENSER
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- C45 0.1MF CONDENSER
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- C83 0.1MF CONDENSER
- C84 0.1MF CONDENSER
- C85 0.1MF CONDENSER
- C86 0.1MF CONDENSER
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- C94 0.1MF CONDENSER
- C95 0.1MF CONDENSER
- C96 0.1MF CONDENSER
- C97 0.1MF CONDENSER
- C98 0.1MF CONDENSER
- C99 0.1MF CONDENSER
- C100 0.1MF CONDENSER
- R1 VARIABLE RESISTOR, 5000Ω
- R2 100Ω RESISTOR
- R3 100Ω RESISTOR
- R4 100Ω RESISTOR
- R5 100Ω RESISTOR
- R6 100Ω RESISTOR
- R7 100Ω RESISTOR
- R8 100Ω RESISTOR
- R9 100Ω RESISTOR
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- R100 100Ω RESISTOR
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- T73 100V TRANSFORMER
- T74 100V TRANSFORMER
- T75 100V TRANSFORMER
- T76 100V TRANSFORMER
- T77 100V TRANSFORMER
- T78 100V TRANSFORMER
- T79 100V TRANSFORMER
- T80 100V TRANSFORMER
- T81 100V TRANSFORMER
- T82 100V TRANSFORMER
- T83 100V TRANSFORMER
- T84 100V TRANSFORMER
- T85 100V TRANSFORMER
- T86 100V TRANSFORMER
- T87 100V TRANSFORMER
- T88 100V TRANSFORMER
- T89 100V TRANSFORMER
- T90 100V TRANSFORMER
- T91 100V TRANSFORMER
- T92 100V TRANSFORMER
- T93 100V TRANSFORMER
- T94 100V TRANSFORMER
- T95 100V TRANSFORMER
- T96 100V TRANSFORMER
- T97 100V TRANSFORMER
- T98 100V TRANSFORMER
- T99 100V TRANSFORMER
- T100 100V TRANSFORMER

NOTE: Broken lines along wires indicate grounded shielding.



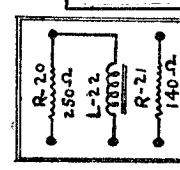
FILTER CONDENSER BANK.

INTERSTAGE AND OUTPUT TRANSFORMER COLOR CODES

Interstage transformer
 Output transformer
 Primary start-Blue
 Primary midtap-Red
 Primary finish-Blue
 Secondary start-Yellow
 Secondary finish-Black

POWER TRANSFORMER COLOR CODE

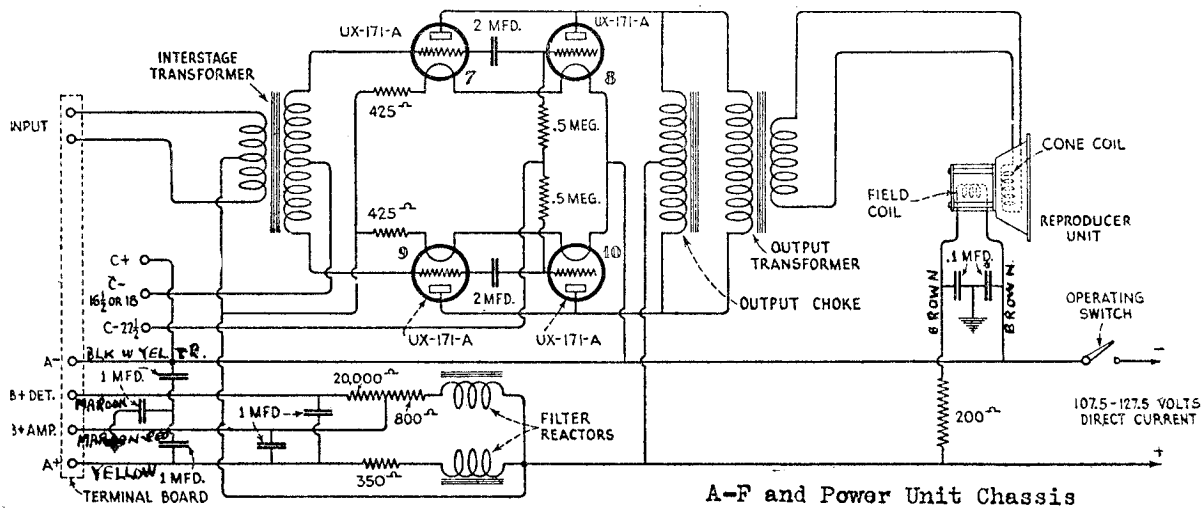
Primary-Black-red tracer
 Primary tap-Black-red, 90/50
 Primary-Black
 280 filament-Brown-green tracer
 280 filament-Brown-green tracer
 245 filament-Brown-yellow tracer
 245 filament-Brown-yellow tracer



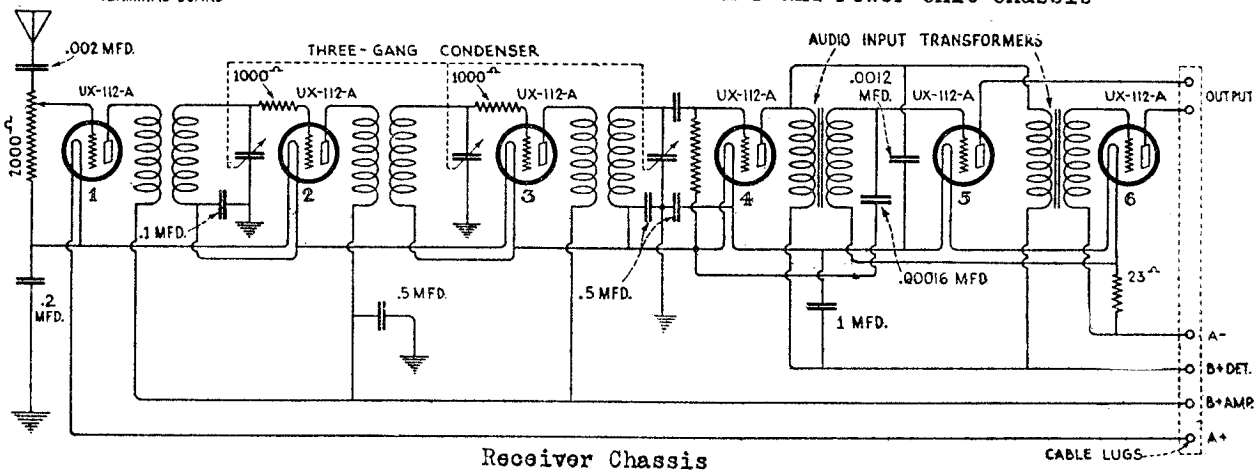
MICROPHONE REACTOR - TERMINALS AND CONNECTIONS.

R. C. A. VICTOR CO., INC.

MODEL Radiola 41 DC



A-F and Power Unit Chassis

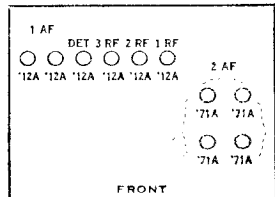


Receiver Chassis

VOLTAGES

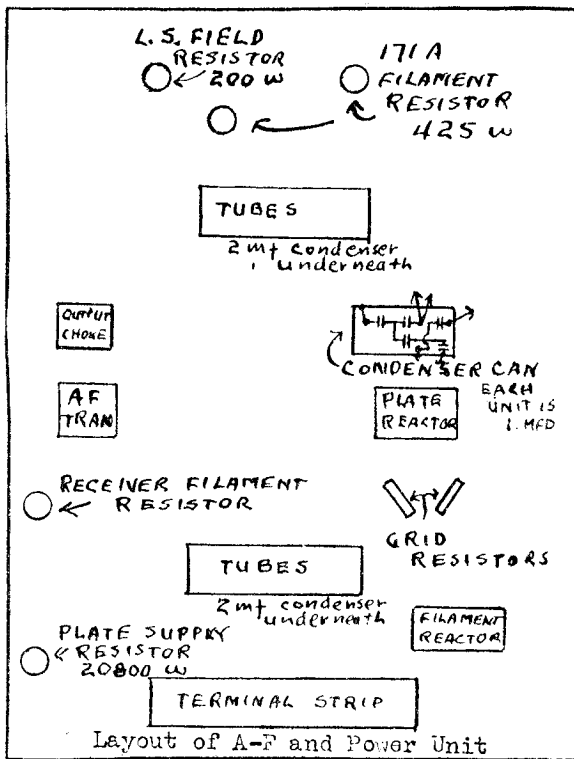
Tube	+Fil.-Grid	Fil.-Plt.	Pl.Crnt.	Fil. V
1	4.2	22	1.5 ma.	4.3
2	4.1	26	2.0	4.4
3	4.2	31	2.4	4.5
4	4.0	15	1.0	4.6
5	10.	95	6.0	4.8
6	10.	100	7.0	5.0
9	27.	100	6.5	4.8
10	4.	95	6.5	5.0
7	27.	100	7.0	5.0
8	4.	95	6.5	5.0

Model Radiola 41 DC (1928)



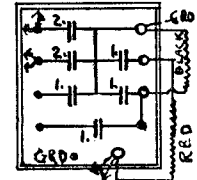
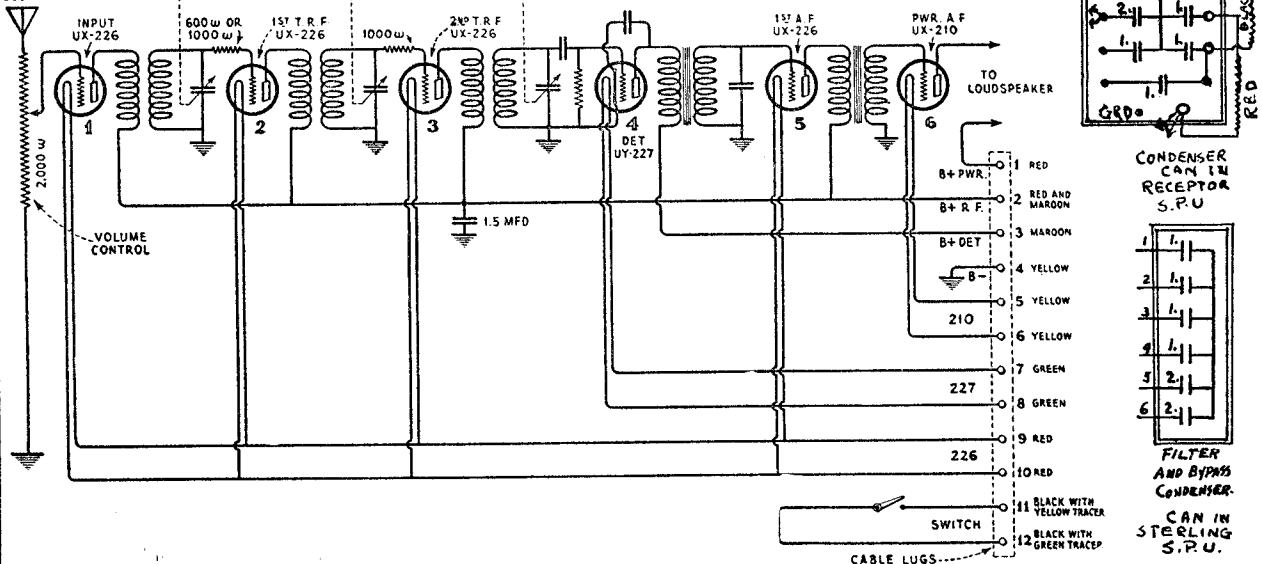
TERMINAL VOLTAGES

120 Volt DC Line
 A- to A+ 35 volts
 A+ to B+Det 5 volts
 A+ to B+ Amp 21 volts

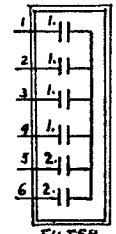


MODEL Radiola 41 AC
R-F Chassis
Sterling SPU
Receptor SPU

R. C. A. VICTOR CO., INC.



CONDENSER CAN IN RECEPTOR S.P.U.



FILTER AND BYPASS CONDENSER

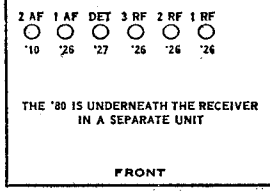
CAN IN STERLING S.P.U.

STERLING

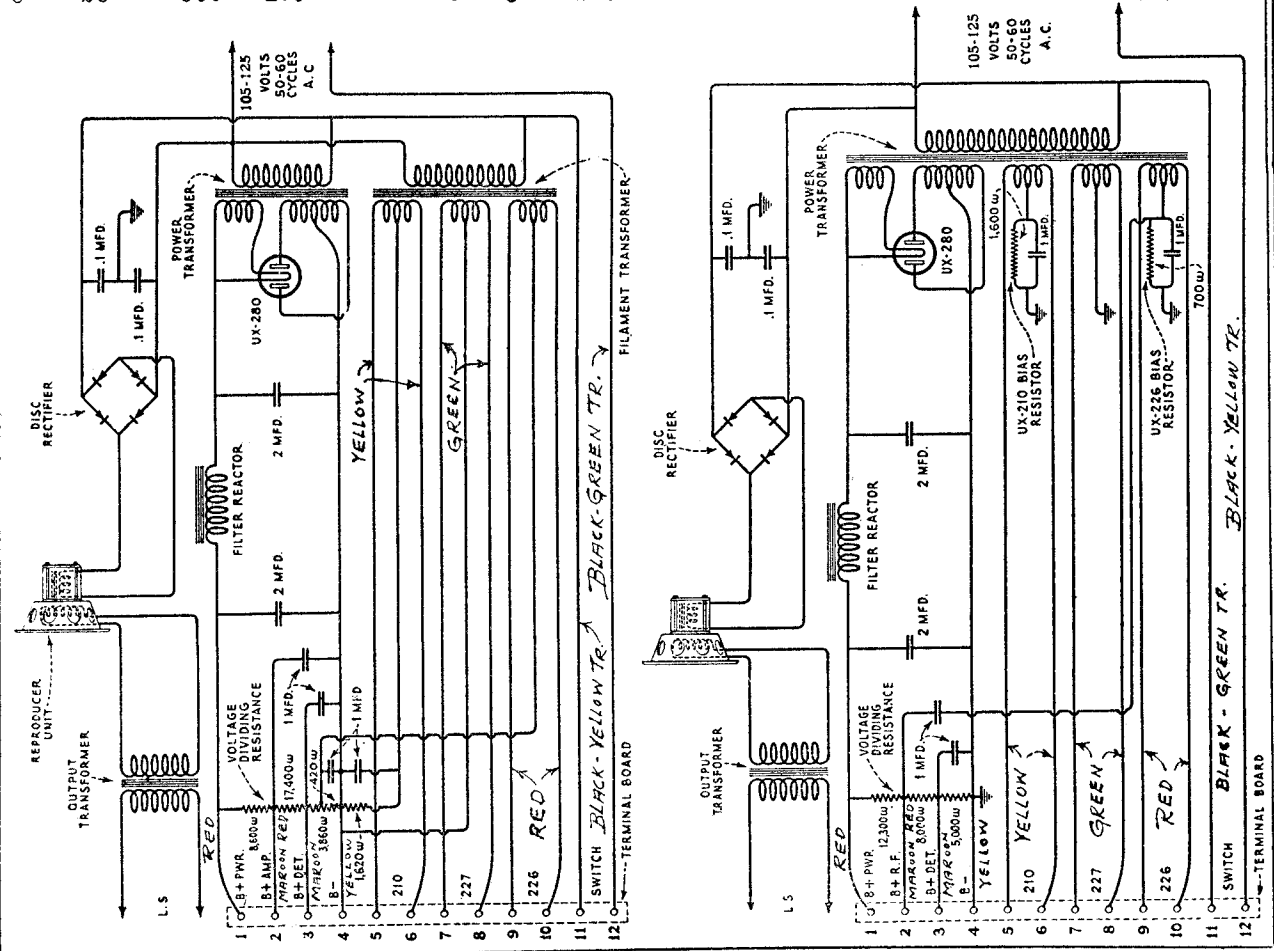
RECEPTOR

Tube	Grd. V.	Plt. V.	Plt. Crnt.	Fil. V.	Tube	Grd. V.	Plt. V.	Plt. Crnt.	Fil. V.
1	10	125	3.5 ma	1.5	1	7.	93	2.5 ma	1.5
2	10	125	3.5	1.5	2	7.	93	2.5	1.5
3	10	125	3.5	1.5	3	7.	93	2.5	1.5
4	-	25	2.0	2.5	4	-	33	2.0	2.5
5	10	125	3.5	1.5	5	7.	93	2.5	1.5
6	20	300	16.	7.5	6	22.	310	16.	7.5

Model Radiola 41 (1928)

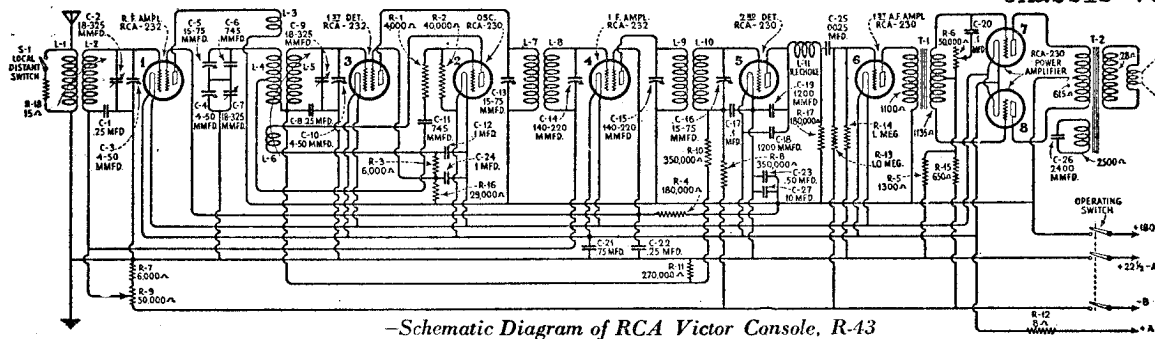


FRONT



R. C. A. VICTOR CO., INC.

MODEL R-43
Schematic
Chassis-Voltage



-Schematic Diagram of RCA Victor Console, R-43

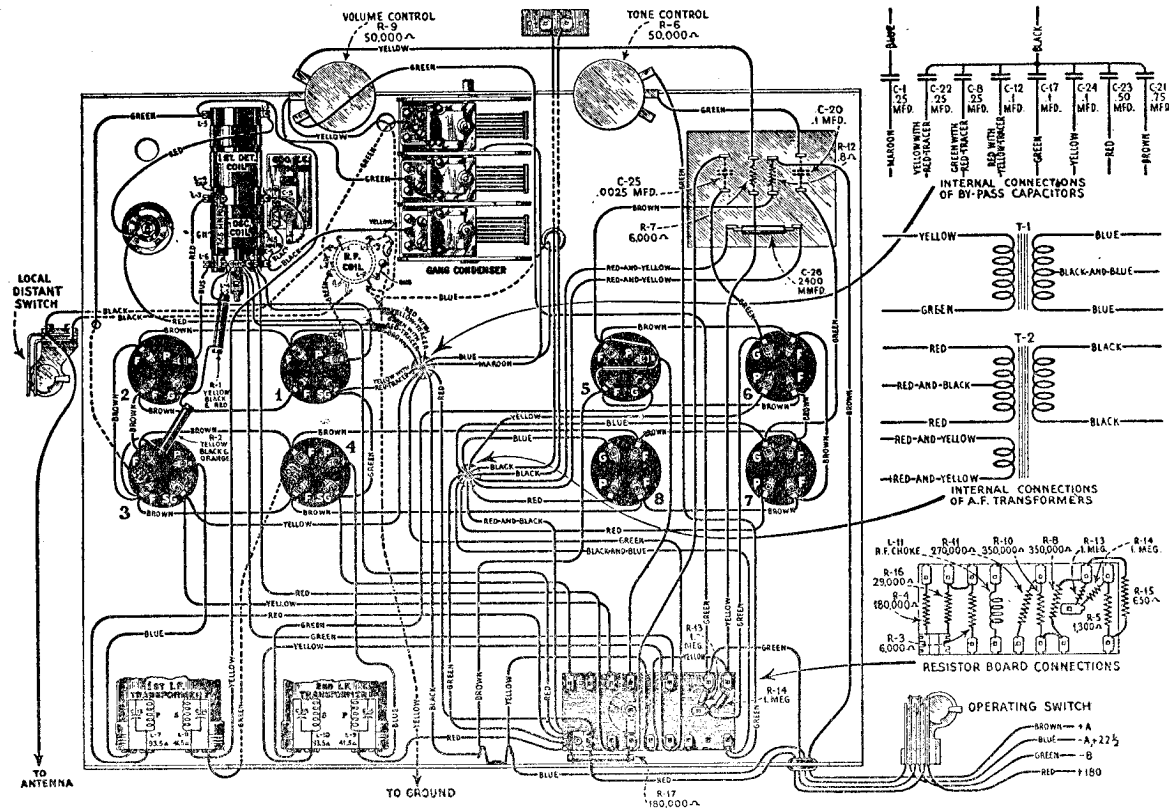
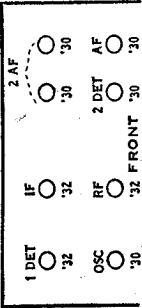
IF PEAK 175 KC.

BATTERIES AT FULL VOLTAGE—NO SIGNAL BEING RECEIVED

These voltages are those obtained with one of the usual set analyzers. The values indicated, therefore, are not necessarily the voltages that actually appear at the Radiotron Sockets when the voltmeter is not connected.

Tube No.	Filament to Control Grid Volts	Filament to Screen Grid Volts	Filament to Plate Volts	Plate Current M. A.	Filament Volts
VOLUME CONTROL AT MINIMUM					
1	22	55	155	0	2.0
2	—	—	50	3.0	2.0
3	0.5	65	150	0.5	2.0
4	22	55	155	0	2.0
5	5.0	—	90	0	2.0
6	2.0	—	150	2.5	2.0
7	15.0	—	150	0.5	2.0
8	15.0	—	150	0.5	2.0
VOLUME CONTROL AT MAXIMUM					
1	1.5	45	150	2.5	2.0
2	—	—	50	3.0	2.0
3	0.5	60	150	0.5	2.0
4	1.5	45	150	2.5	2.0
5	5.0	—	90	0	2.0
6	2.0	—	150	2.5	2.0
7	15.0	—	150	0.5	2.0
8	15.0	—	150	0.5	2.0

Model R-43 (1931)

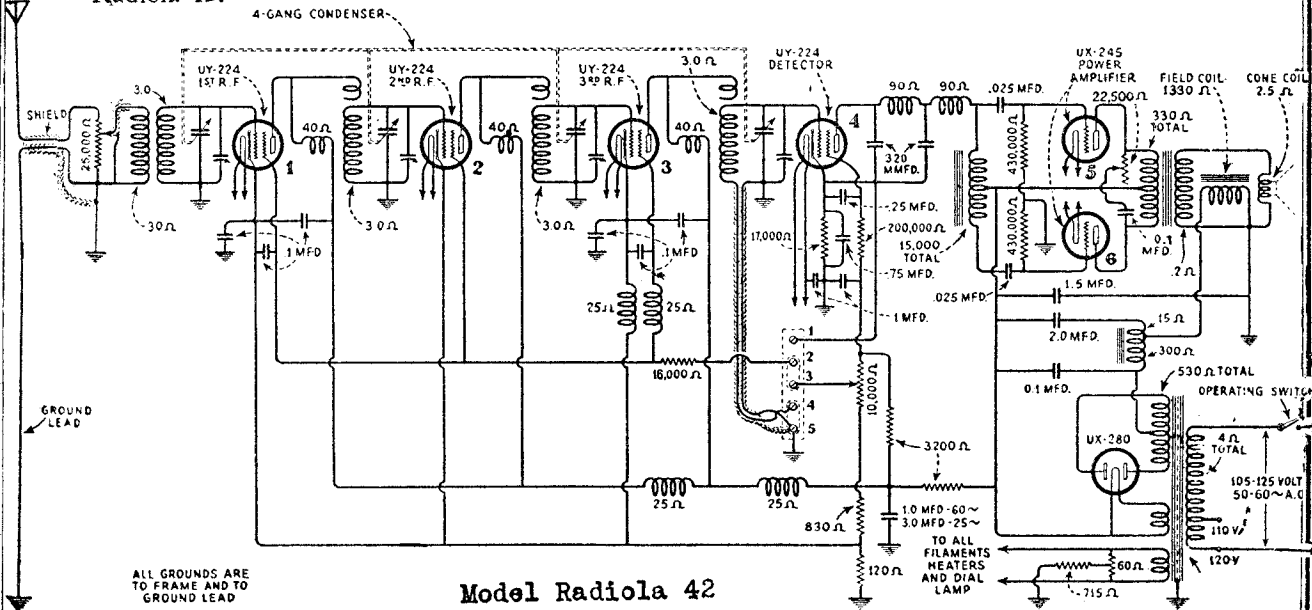


-Wiring Diagram of RCA Victor Console, R-43

Radiola 42 Schematic
Model R-43 Notes

R. C. A. - VICTOR CO., INC.

All the information contained in the Radiola 48 Service Notes will therefore apply to the Radiola 42.



Model Radiola 42

It will be noted that a new volume control is used. The antenna section of this unit has a value of 25,000 ohms instead of 50,000 ohms as used in the Radiola 48. This volume control is also being used as a replacement in Radiola 48. The screen grid voltage section has a value of 10,000 ohms and the 12,000 ohm shunt resistor is not used. The 0.005 mfd. condenser across the plates of Radiotrons UX-245 has been omitted due to the connection of the tone control in the same position. When making replacements of the condenser and reactor unit it will be necessary to clip the two leads that are connected to the .005 mfd. condenser close to the container. The reason for this is that the replacement unit supplied is suitable for either the Radiola 42 or 48.

Model R-43 Service Notes

The RCA Victor Console, R-43 is an eight tube screen grid battery operated Super-Heterodyne radio receiver.

Three Radiotrons RCA-232 are used in the R.F., 1st detector and I.F. stages respectively. Five Radiotrons RCA-230 are used in the Oscillator, 2nd detector, 1st audio and push-pull power stage.

A reference to the RCA Victor Radiola Superette Service Notes will give the details of circuit operation up to and including the second detector. The audio circuits of the R-43 are however, considerably different from the R-7. A discussion of their function follows:

The first audio stage operates in the usual manner, its output being fed into the grid circuit of the push-pull stage. The output stage is of the push-pull type, in which the tubes are biased to substantially plate current cut-off. The arrangement is such that the output stage may deliver substantially four times the output that would be obtained with the same tubes operated in the usual circuit. This system is very economical due to there being but a small amount of residual plate current flowing in the output stage.

Current is drawn only when a modulated signal is being received.

An extra winding, shunted by a capacitor, is placed on the output transformer. The purpose of this circuit is to provide a high frequency cut-off for the audio amplifier.

A tone control is provided, which consists of a 0.1 mfd. capacitor and a 50,000 Ohm variable resistor connected across one half of the secondary of the input transformer. This circuit functions to reduce the high frequency output as the resistance is decreased.

The permanent magnet dynamic loudspeaker used with this receiver is a new development and gives all the fine quality and life-like reproduction inherent in this type of reproducer.

The receiver is designed for use with the new Eveready Aircell "A" battery which provides a life in excess of 600 ampere hours. The receiver draws but .48 amperes, giving approximately 1200 hours life from a single filament battery.

The plate and grid supply for all Radiotrons is furnished from four heavy duty "B" batteries. Due to the

low current drain—8 to 15 M.A.—excellent life is obtained from this source of current.

SERVICE DATA

A reference to the RCA Victor Superette, R-7 Service Notes will give complete details on R.F., oscillator and I.F. adjustments as well as the usual service information required with this type of receiver.

BATTERIES

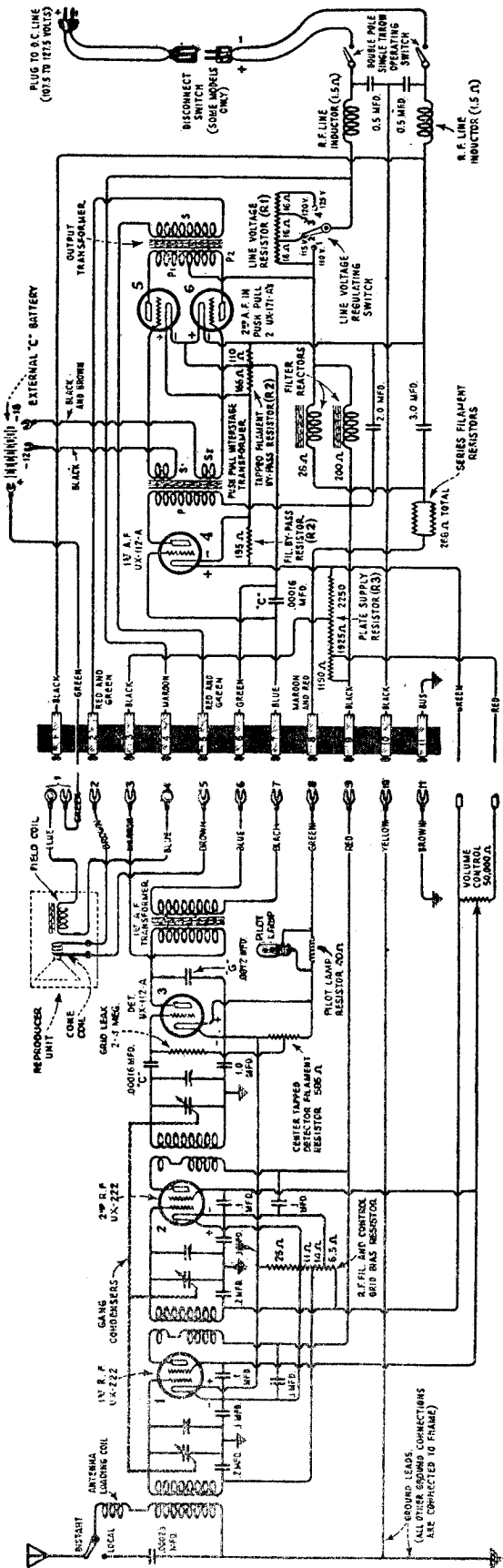
The Eveready Aircell "A" battery must be kept clean and the plates covered with water at all times. Operation at temperatures of 40 degrees Fahrenheit or lower is not recommended and if attempted will result in damage to the battery. Having the battery idle at this temperature does not in any way affect it. It is essential that an installation be made where the receiver is to be operated at 40 degrees Fahrenheit or less, a single cell storage battery should be used. Due to the low current drain, excellent life from one charging will be obtained.

"B" batteries should be replaced when their output voltage has dropped 25% under load.

SPECIAL NOTE*** Material within border very important information

R. C. A. VICTOR CO., INC.

MODEL Radiola 46 DC
 MODEL Radiola 44 AC
 Terminal Voltage
 MODEL Radiola 46 AC
 Terminal Voltage



Model 46 AC Terminal Voltage

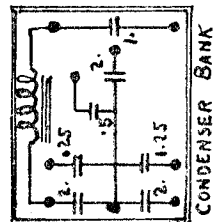
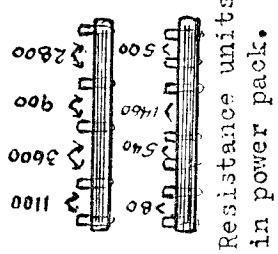
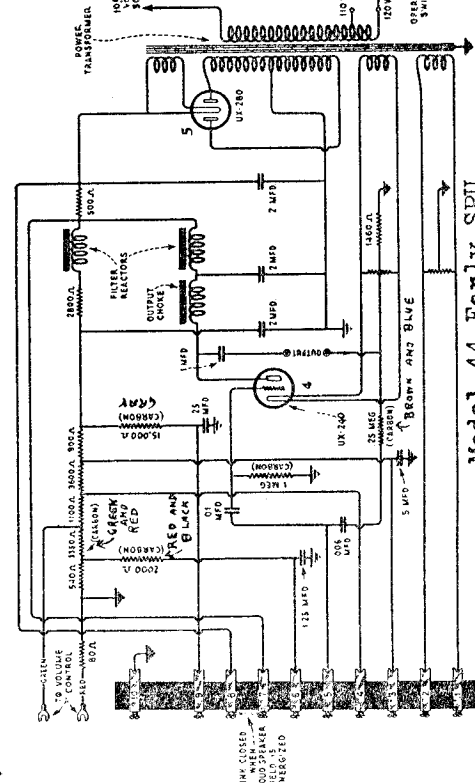
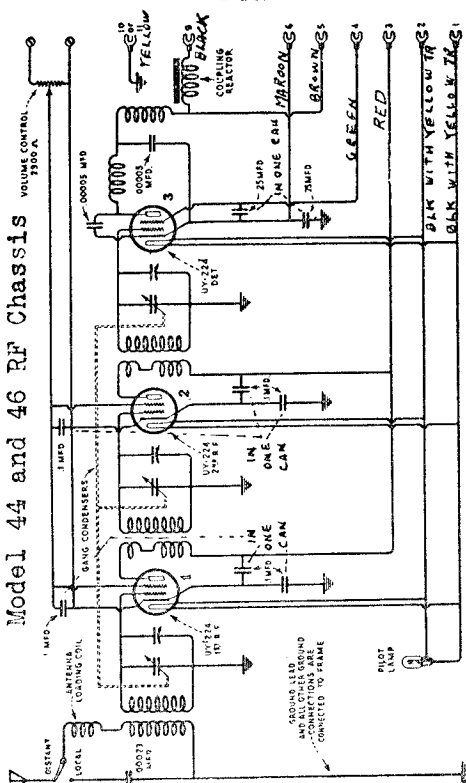
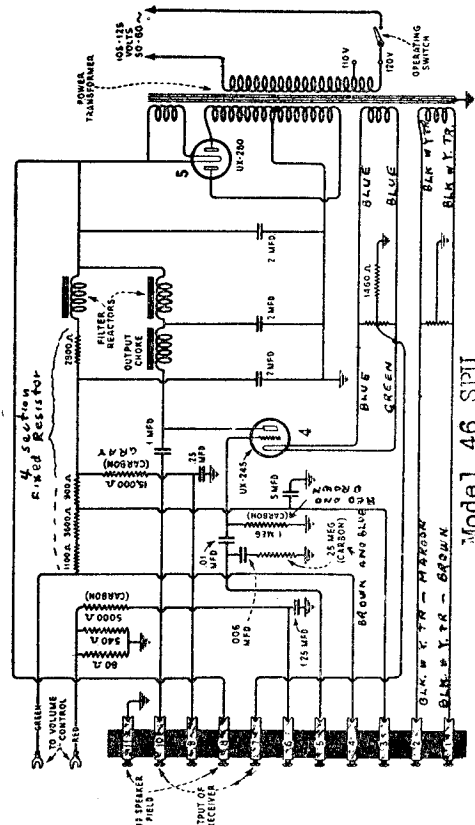
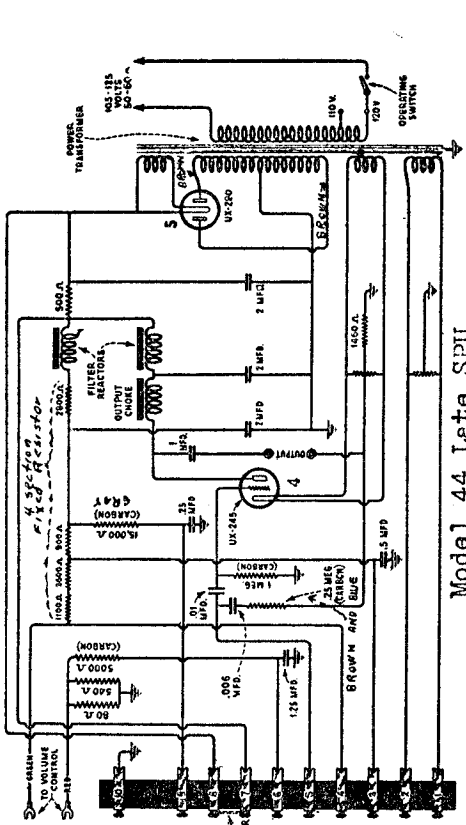
Model 44 AC Terminal Voltage

Terminals	Voltage Control at	
	Min	Max
1 to 2	2.5 A.C.	2.5 A.C.
3 to Red	185. D.C.	170. D.C.
VC lead	70. D.C.	65. D.C.
4 to 6	195. D.C.	180. D.C.
6 to 9	5. D.C.	5. D.C.
6 to 11	320. D.C.	320. D.C.
8 to 11	2.1 D.C.	2.1 D.C.
Red VC lead to 11	0.	70. D.C.
Arm of VC lead to Red		
VC lead		

Terminals	Vol. Control at	
	Min.	Max.
1 to 2	2.5 A.C.	2.5 A.C.
3 to Red	185. D.C.	170. D.C.
VC lead	70. D.C.	60. D.C.
4 to 6	195. D.C.	180. D.C.
6 to 9	5. D.C.	5. D.C.
6 to 10	330. D.C.	330. D.C.
8 to 10	2.1 D.C.	2.1 D.C.
Red VC lead to 10	0.	70. D.C.
Arm of VC lead to Red		
VC lead		

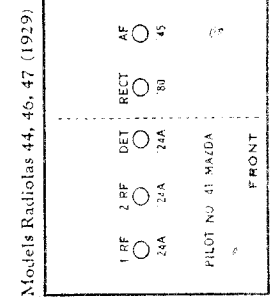
MODEL 44,46 RF Chassis
 MODEL 44 Early SPU
 MODEL 44 Late SPU
 MODEL 46 SPU

R. C. A. VICTOR CO., INC.



RADIOLA—Models 44-46
 Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max

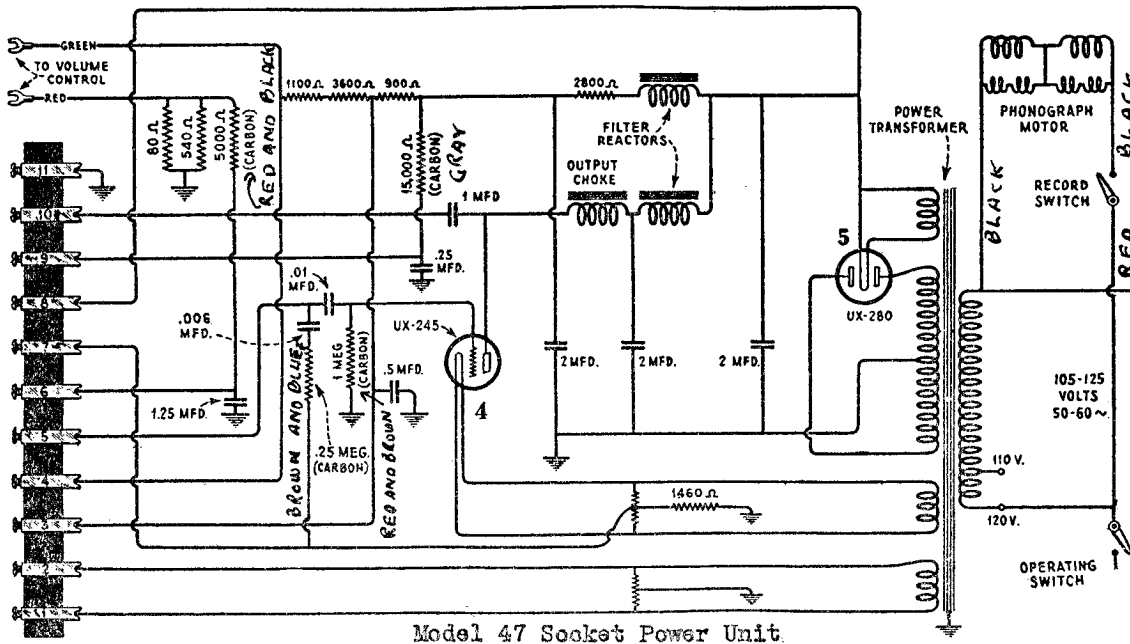
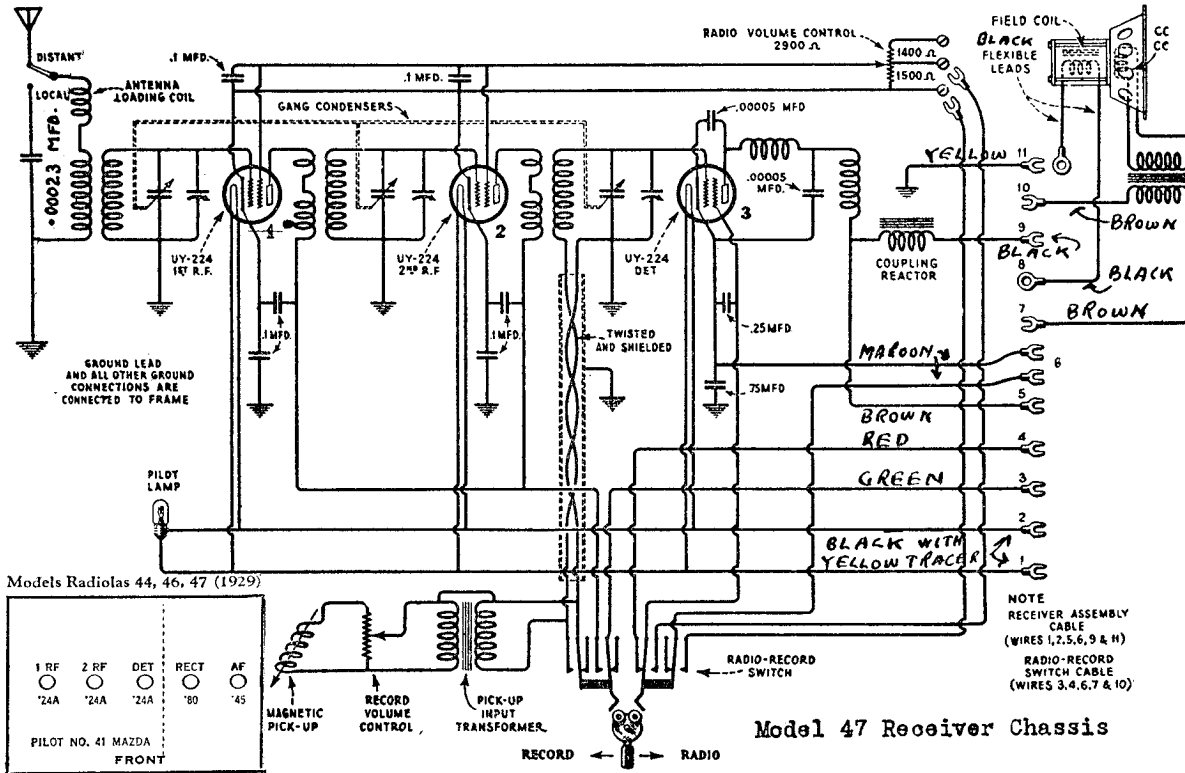
TUBE NO	TYPE	POSITION OF TUBE IN SET	READINGS PLUG IN SOCKET OF SET			
			TUBE IN TESTER	TUBE IN NORMAL POSITION	TUBE IN SOCKET	SCALE
1	6X4	1	1.5	1.5	1.5	1.5
2	6AR5	2	1.5	1.5	1.5	1.5
3	6AV6	3	1.5	1.5	1.5	1.5
4	6BE6	4	1.5	1.5	1.5	1.5
5	6BD6	5	1.5	1.5	1.5	1.5
6	6BE7	6	1.5	1.5	1.5	1.5
7	6BE8	7	1.5	1.5	1.5	1.5
8	6BE9	8	1.5	1.5	1.5	1.5
9	6BE10	9	1.5	1.5	1.5	1.5
10	6BE11	10	1.5	1.5	1.5	1.5
11	6BE12	11	1.5	1.5	1.5	1.5
12	6BE13	12	1.5	1.5	1.5	1.5
13	6BE14	13	1.5	1.5	1.5	1.5
14	6BE15	14	1.5	1.5	1.5	1.5
15	6BE16	15	1.5	1.5	1.5	1.5
16	6BE17	16	1.5	1.5	1.5	1.5
17	6BE18	17	1.5	1.5	1.5	1.5
18	6BE19	18	1.5	1.5	1.5	1.5
19	6BE20	19	1.5	1.5	1.5	1.5
20	6BE21	20	1.5	1.5	1.5	1.5
21	6BE22	21	1.5	1.5	1.5	1.5
22	6BE23	22	1.5	1.5	1.5	1.5
23	6BE24	23	1.5	1.5	1.5	1.5
24	6BE25	24	1.5	1.5	1.5	1.5
25	6BE26	25	1.5	1.5	1.5	1.5
26	6BE27	26	1.5	1.5	1.5	1.5
27	6BE28	27	1.5	1.5	1.5	1.5
28	6BE29	28	1.5	1.5	1.5	1.5
29	6BE30	29	1.5	1.5	1.5	1.5
30	6BE31	30	1.5	1.5	1.5	1.5
31	6BE32	31	1.5	1.5	1.5	1.5
32	6BE33	32	1.5	1.5	1.5	1.5
33	6BE34	33	1.5	1.5	1.5	1.5
34	6BE35	34	1.5	1.5	1.5	1.5
35	6BE36	35	1.5	1.5	1.5	1.5
36	6BE37	36	1.5	1.5	1.5	1.5
37	6BE38	37	1.5	1.5	1.5	1.5
38	6BE39	38	1.5	1.5	1.5	1.5
39	6BE40	39	1.5	1.5	1.5	1.5
40	6BE41	40	1.5	1.5	1.5	1.5
41	6BE42	41	1.5	1.5	1.5	1.5
42	6BE43	42	1.5	1.5	1.5	1.5
43	6BE44	43	1.5	1.5	1.5	1.5
44	6BE45	44	1.5	1.5	1.5	1.5
45	6BE46	45	1.5	1.5	1.5	1.5
46	6BE47	46	1.5	1.5	1.5	1.5
47	6BE48	47	1.5	1.5	1.5	1.5
48	6BE49	48	1.5	1.5	1.5	1.5
49	6BE50	49	1.5	1.5	1.5	1.5
50	6BE51	50	1.5	1.5	1.5	1.5
51	6BE52	51	1.5	1.5	1.5	1.5
52	6BE53	52	1.5	1.5	1.5	1.5
53	6BE54	53	1.5	1.5	1.5	1.5
54	6BE55	54	1.5	1.5	1.5	1.5
55	6BE56	55	1.5	1.5	1.5	1.5
56	6BE57	56	1.5	1.5	1.5	1.5
57	6BE58	57	1.5	1.5	1.5	1.5
58	6BE59	58	1.5	1.5	1.5	1.5
59	6BE60	59	1.5	1.5	1.5	1.5
60	6BE61	60	1.5	1.5	1.5	1.5
61	6BE62	61	1.5	1.5	1.5	1.5
62	6BE63	62	1.5	1.5	1.5	1.5
63	6BE64	63	1.5	1.5	1.5	1.5
64	6BE65	64	1.5	1.5	1.5	1.5
65	6BE66	65	1.5	1.5	1.5	1.5
66	6BE67	66	1.5	1.5	1.5	1.5
67	6BE68	67	1.5	1.5	1.5	1.5
68	6BE69	68	1.5	1.5	1.5	1.5
69	6BE70	69	1.5	1.5	1.5	1.5
70	6BE71	70	1.5	1.5	1.5	1.5
71	6BE72	71	1.5	1.5	1.5	1.5
72	6BE73	72	1.5	1.5	1.5	1.5
73	6BE74	73	1.5	1.5	1.5	1.5
74	6BE75	74	1.5	1.5	1.5	1.5
75	6BE76	75	1.5	1.5	1.5	1.5
76	6BE77	76	1.5	1.5	1.5	1.5
77	6BE78	77	1.5	1.5	1.5	1.5
78	6BE79	78	1.5	1.5	1.5	1.5
79	6BE80	79	1.5	1.5	1.5	1.5
80	6BE81	80	1.5	1.5	1.5	1.5
81	6BE82	81	1.5	1.5	1.5	1.5
82	6BE83	82	1.5	1.5	1.5	1.5
83	6BE84	83	1.5	1.5	1.5	1.5
84	6BE85	84	1.5	1.5	1.5	1.5
85	6BE86	85	1.5	1.5	1.5	1.5
86	6BE87	86	1.5	1.5	1.5	1.5
87	6BE88	87	1.5	1.5	1.5	1.5
88	6BE89	88	1.5	1.5	1.5	1.5
89	6BE90	89	1.5	1.5	1.5	1.5
90	6BE91	90	1.5	1.5	1.5	1.5
91	6BE92	91	1.5	1.5	1.5	1.5
92	6BE93	92	1.5	1.5	1.5	1.5
93	6BE94	93	1.5	1.5	1.5	1.5
94	6BE95	94	1.5	1.5	1.5	1.5
95	6BE96	95	1.5	1.5	1.5	1.5
96	6BE97	96	1.5	1.5	1.5	1.5
97	6BE98	97	1.5	1.5	1.5	1.5
98	6BE99	98	1.5	1.5	1.5	1.5
99	6BE100	99	1.5	1.5	1.5	1.5



Models Radiolas 44, 46, 47 (1929)

MODEL Radiola 47

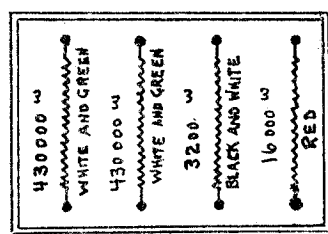
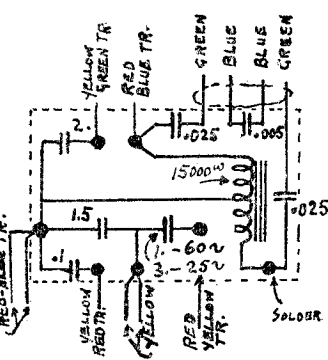
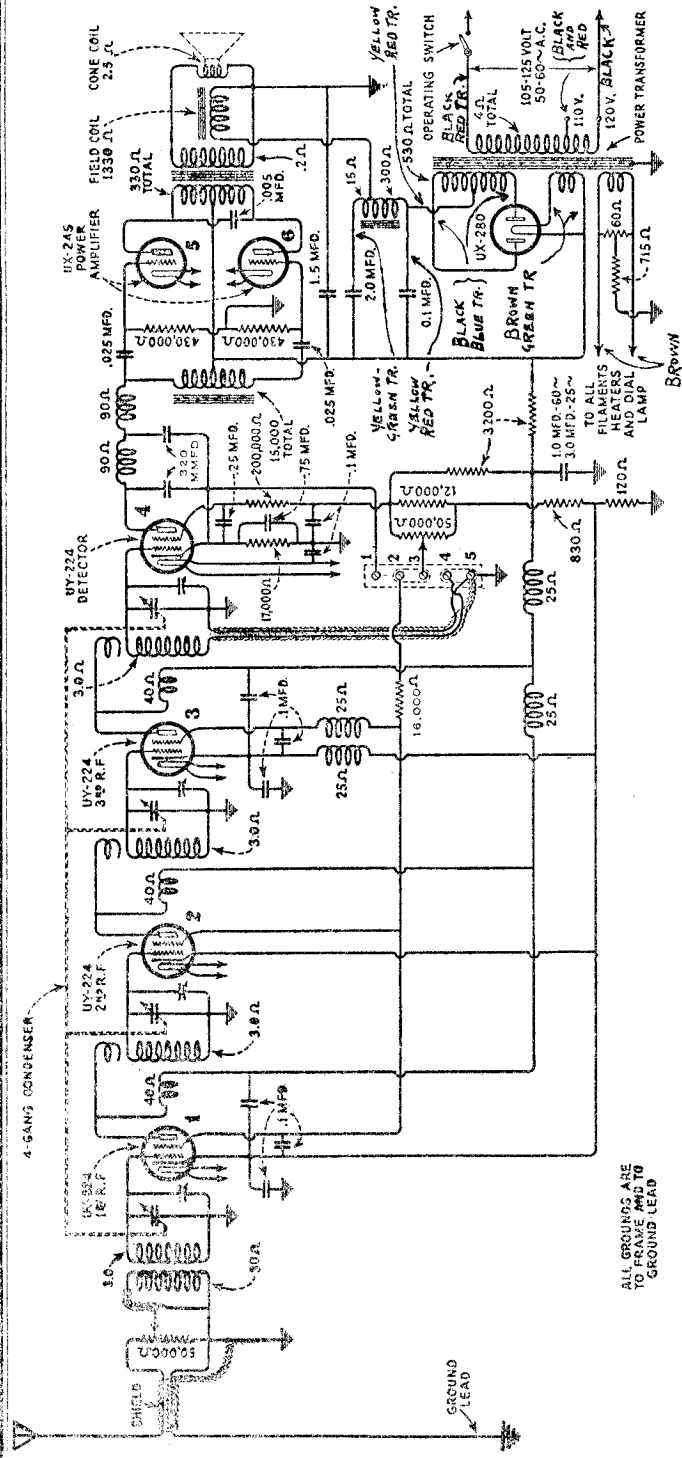
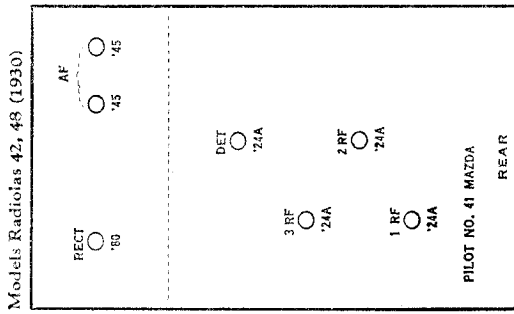
R. C. A. VICTOR CO., INC.



SOCKET VOLTAGES—RADIOLA 47

Volume Control at Minimum—Radio-Record Switch at "Radio"

Socket No.	Cathode to Heater Volts	Fil. to Control grid Volts	Cathode or fil. to plate Volts	Plate Current Millamperes	Filament or Heater Volts
1	2.1	—	190	0	2.35
2	2.1	—	185	0	2.35
3	18	—	120	3.0	2.35
4	—	6.0	225	29.0	2.35



Socket Voltages. (120 Volt Line.) VOL. CONTR. AT MAXIMUM.

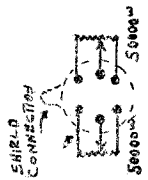
Tube No.	Cath. to Heater V. D.C.	Cath. or Fil. to Contr. Gr. V. D.C.	Cath. to Screen Gr. V. D.C.	Cath. to Fil. to Plate V. D.C.	Plate Current Ma.	S.G. Current Ma.	Heater or Fil. Volts.
1	-40	-2.5	+85	160	3.	0.2	2.3
2	-36	-2.5	+85	155	3.5	0.15	2.3
3	-36	-2.5	+75	155	3.5	0.15	2.3
4	-28	-7.5	+55	225	0.5	0.1	2.3
5	---	-1.	---	200	25.	---	2.3
6	---	-1.	---	200	25.	---	2.3

Internal connections of Capacitor and Coupling Reactor Pack

Bypass Condenser Units



Internal Connections of Volume Control



R. C. A. VICTOR CO., INC.

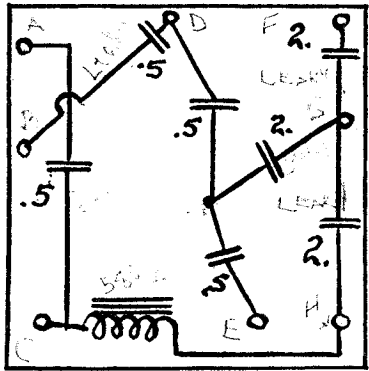
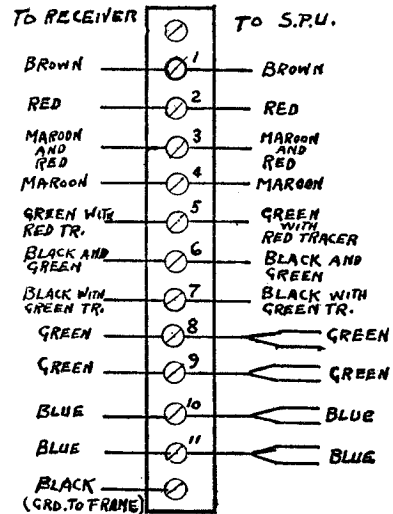
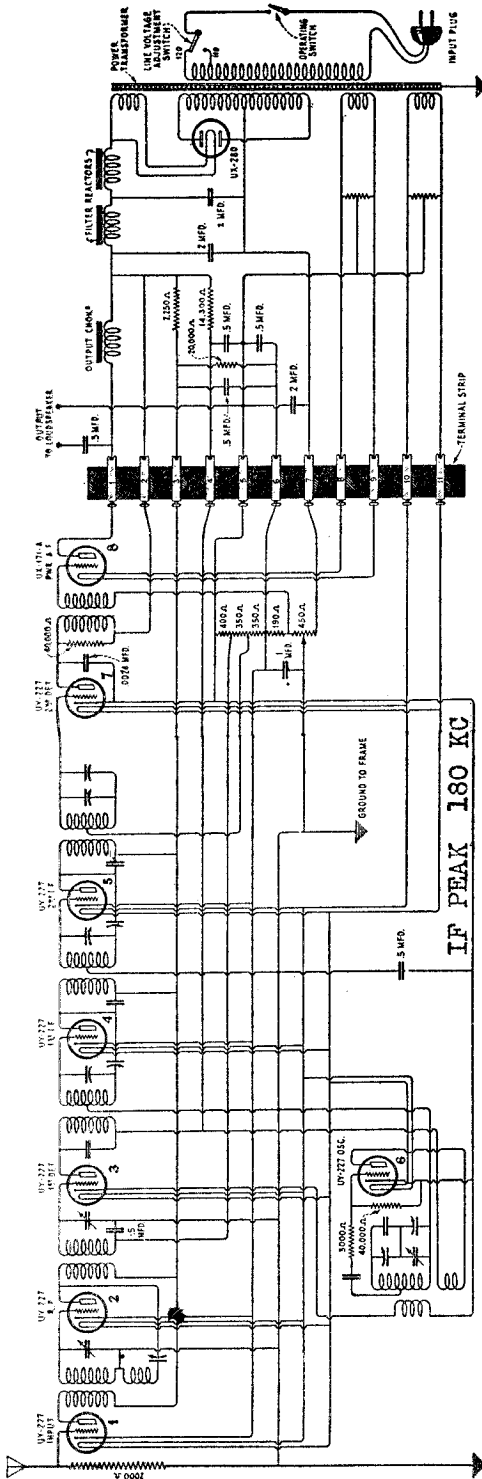
MODEL Radiola 60

RADIOLA 50

is the same as the Radiola 17 with the exception that it makes use of a 100-A speaker and the receiver is mounted in a console cabinet.

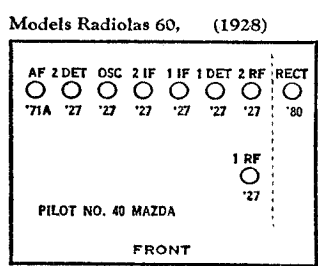
Radiola 51

is the same as the Radiola 18. The Radiola 51 AC is the same as the Radiola 18 AC, except that it is mounted in a console cabinet. The Radiola 51 DC is the same as the Radiola 18 DC, except that it is mounted in a console cabinet.



Filter, bypass condensers and output choke.

Terminal Strip



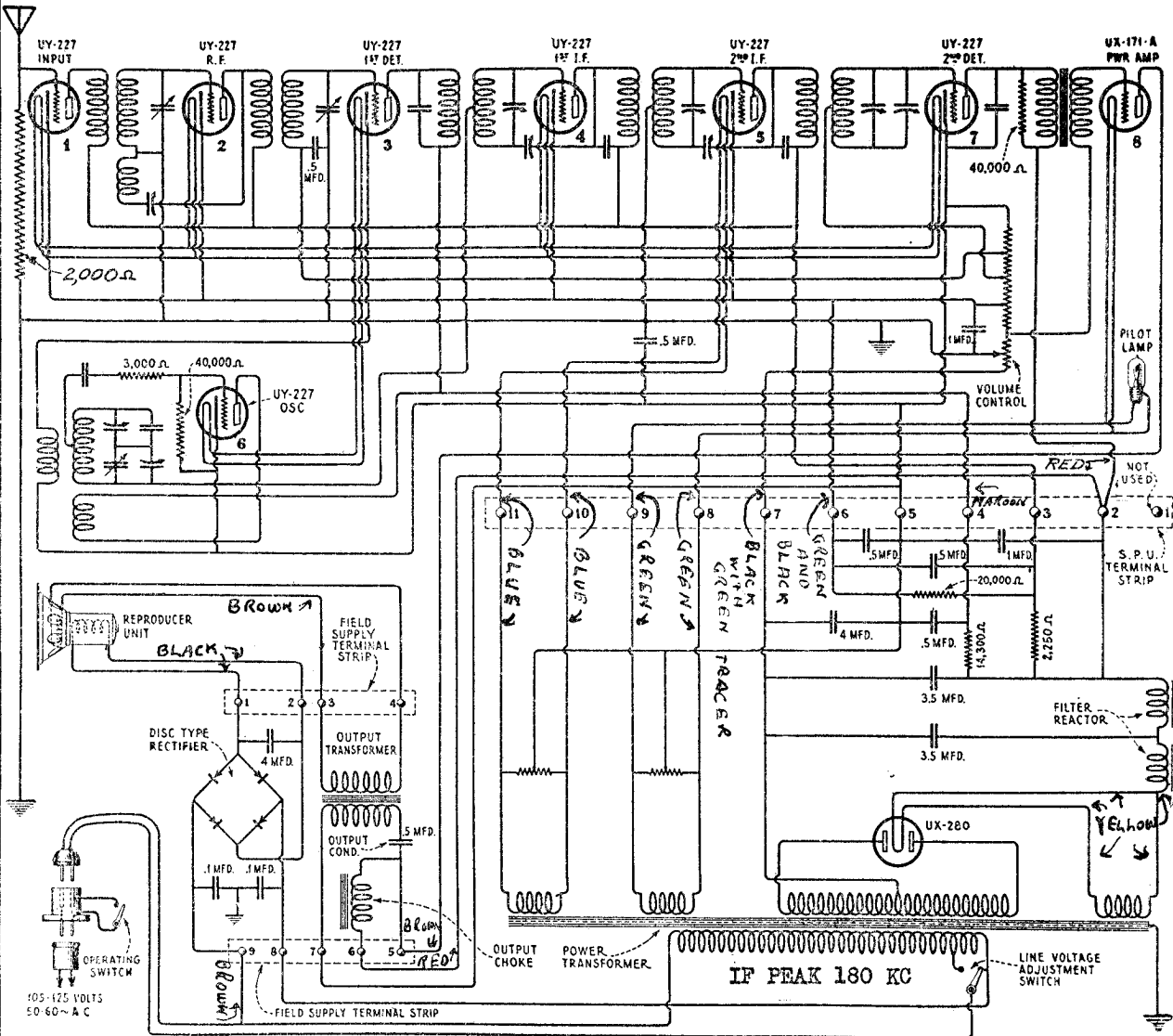
RADIOLA—Model 60

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. LTD.	READINGS PLUG IN SOCKET OF SET								
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	0 VOLTS	BATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE	
1	227	Ant. Coup.	2.35	148	2.2	144	18.0	25	1.0	3.0	2.0
2	227	1st. R.F.	2.35	148	2.2	144	18.0	25	1.0	3.0	2.0
3	227	1st. Det.	2.35	84	2.2	70	9.0	0	1.0	3.0	2.0
4	227	1st. I.F.	2.35	148	2.2	144	18.0	25	1.0	4.0	3.0
5	227	2nd. I.F.	2.35	148	2.2	144	18.0	25	1.0	4.0	3.0
6	227	Oscillator	2.35	118	2.2	70	0.0	0	7.0	7.0	0.0
7	227	2nd. Det.	2.35	162	2.2	157	18.0	0	1.0	3.0	2.0
8	171A	1st. Audio	5.00	178	4.8	157	51.5		15.0	17.0	2.0
9	280	Rectifier	5.00		4.8				19.0		

Note: The above readings were taken with a line voltage of 117 volts. The volume control should be set centrally with the line vertical in order to get the above readings. The "C" voltage on tubes 1, 2, 4, and 5 will vary from 9 to 27 volts; depending on the position of this volume control, hence, these readings are taken at the middle point.

MODEL Radiola 62

R. C. A. VICTOR CO., INC.



SOCKET VOLTAGES

Tube Fil. V. Plt. V. Grid V. Pl. Crnt

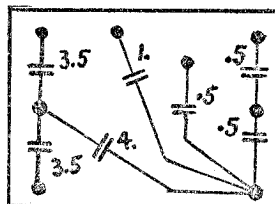
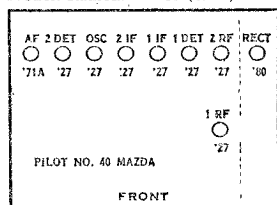
Tube	Fil. V.	Plt. V.	Grid V.	Pl. Crnt
Coupling	2.05	130	8.	3.5 ma.
RF	2.05	130	8.	3.6
1 Det	2.05	80	8.	.5
1 IF	2.05	130	8.	3.
2 IF	2.05	130	8.	3.5
Oscil	2.05	75	-	5.
2 Det	2.05	150	15.	-
AF	4.4	180 c	39.	15.

TERMINAL VOLTAGES

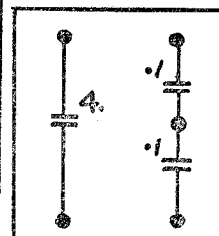
Between	Voltage
2 and 7	210 volts DC
3 and 7	160 volts DC
4 and 7	110 volts DC
8 and 9	5 volts AC
10 and 11	2.5 volts AC

Output voltage of disc rectifier with field connected should be 100 volts.

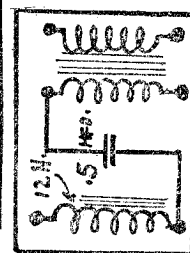
Models Radiolas 62 (1928)



Filter and Bypass Condensers



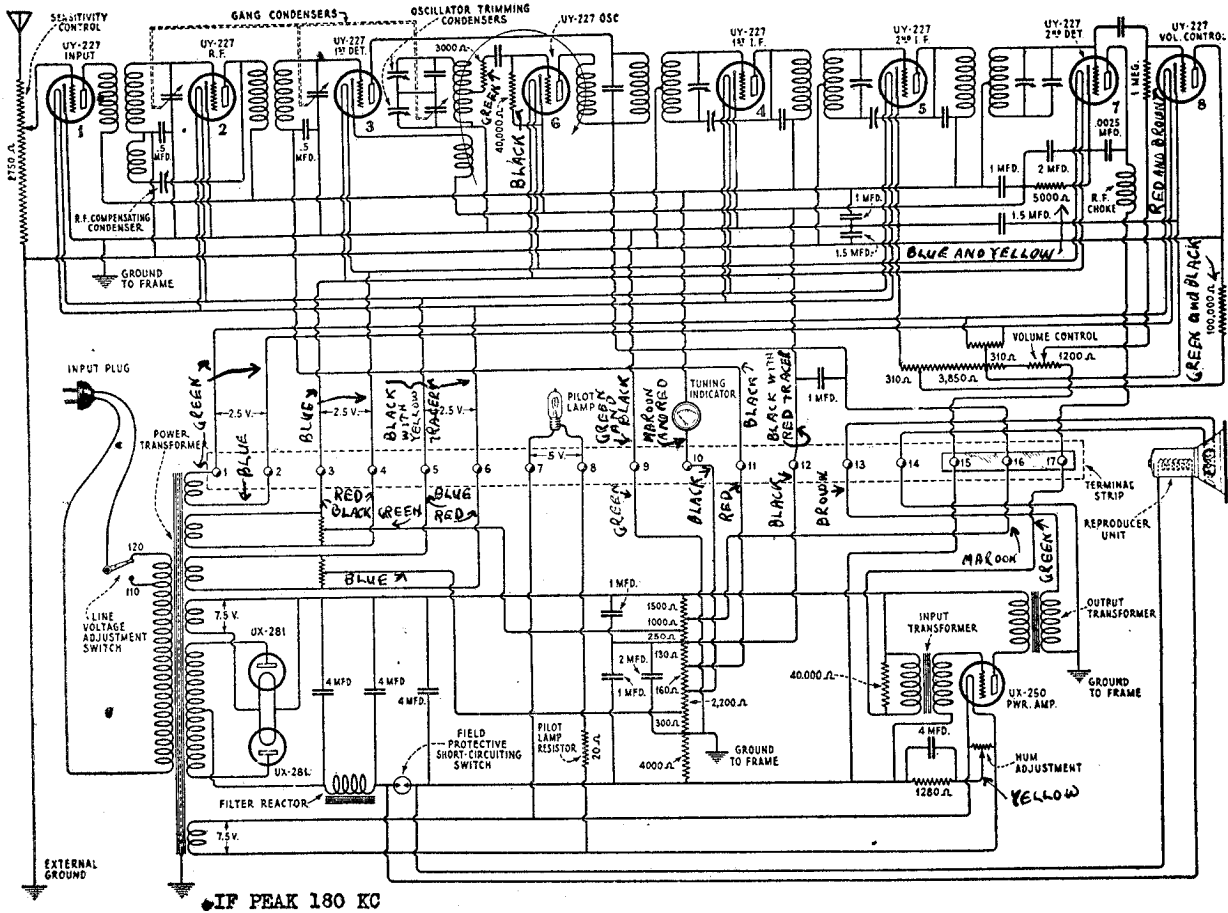
Condenser Bank for Field Supply



Coupling Unit

R. C. A. VICTOR CO., INC.

MODEL Radiola 64
Schematic
Voltage



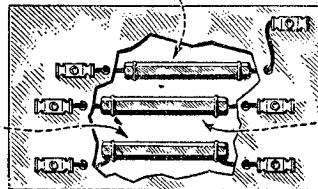
•IF PEAK 180 KC

TERMINAL VOLTAGES

- 1 and 2 2.5 V. AC.
- 3 and 4 2.5 V. AC.
- 5 and 6 2.5 V. AC.
- 7 and 8 Light On 5.0 V. AC.
- 9 and 15 150. V. DC.
- 11 and 15 300. V. DC.
- 12 and 15 375. V. DC.
- 15 and 16 400. V. DC.
- 15 and 17 500. V. DC.

RED AND BROWN - 1 MEGOHM

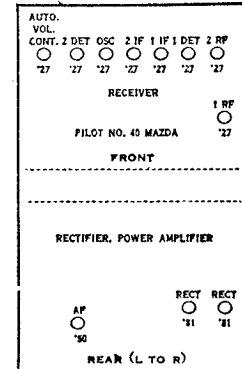
BLUE AND YELLOW - 5,000 Ω



GREEN AND BLACK 100,000 Ω

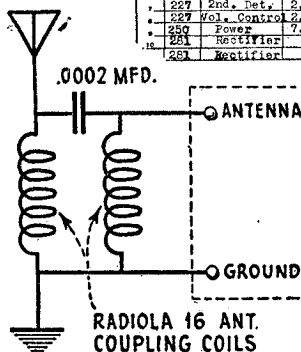
Arrangement of resistors on terminal board

Model Radiola 64 (1928)

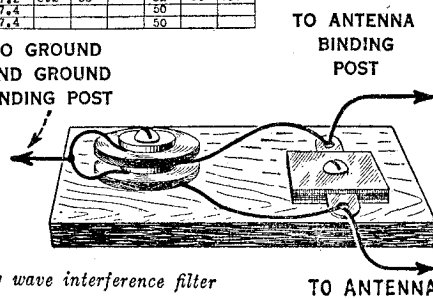


RADIOLA—Model 64
Line Voltage 112—Volume Control Full

TUBE NO. IN CORD	TYPE OF TUBE	POSITION OF TUBE 1ST. R.F., DET., ETC.	TUBE OUT		TUBE IN TESTER					
			A VOLTS	B VOLTS	5 VOLTS	CHROME PLATE VOLTS	NORMAL PLATE M.A. TEST	PHYS. M.A. TEST	PLATE M.A. CHANGE	
227	Ant. Coupl. St.	2.5	125	2.4	124	25	13.5	3.4	7.8	4.4
227	Tuned R.F.	2.5	128	2.4	124	25	16.0	3.3	7.1	5.8
227	Tuned Ist. Det.	2.5	80	2.4	75	25	16.0	2.9	2.9	2.7
227	2nd. Ist. Det.	2.5	128	2.4	124	25	13.5	3.4	7.8	4.4
227	2nd. I.F.	2.5	128	2.4	124	25	13.5	3.4	7.8	4.4
227	Oscillator	2.5	80	2.4	75	25	13.5	7.0	7.6	4.6
227	2nd. Det.	2.5	180	2.4	176	25	13.5	5.0	—	—
227	Vol. Control	2.5	80	2.4	75	4	—	—	—	—
250	Power Rectifier	7.5	584	7.2	592	65	—	50	50	5.0
251	Rectifier	7.5	—	7.4	—	—	—	—	—	—
253	Rectifier	—	—	7.4	—	—	—	—	—	—

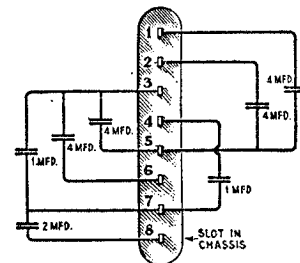


Long wave interference filter

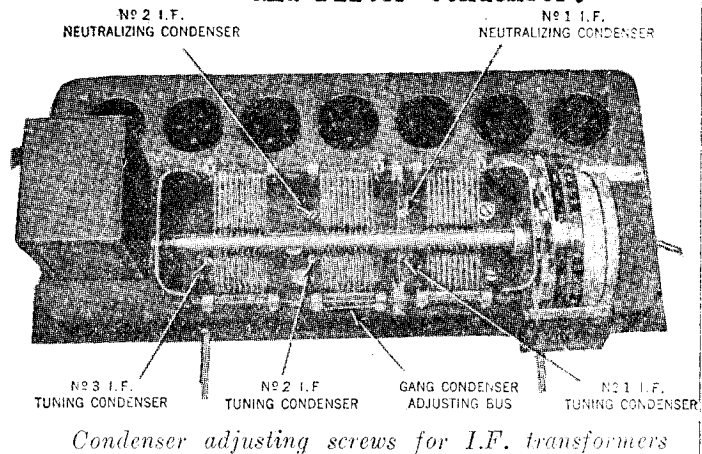
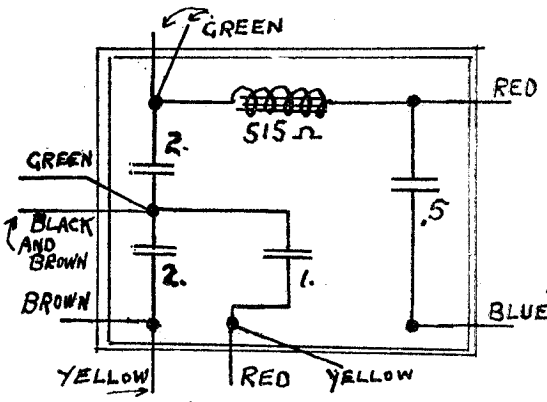
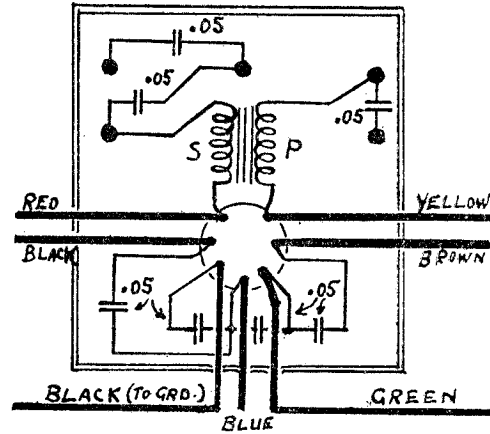
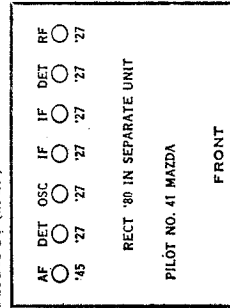
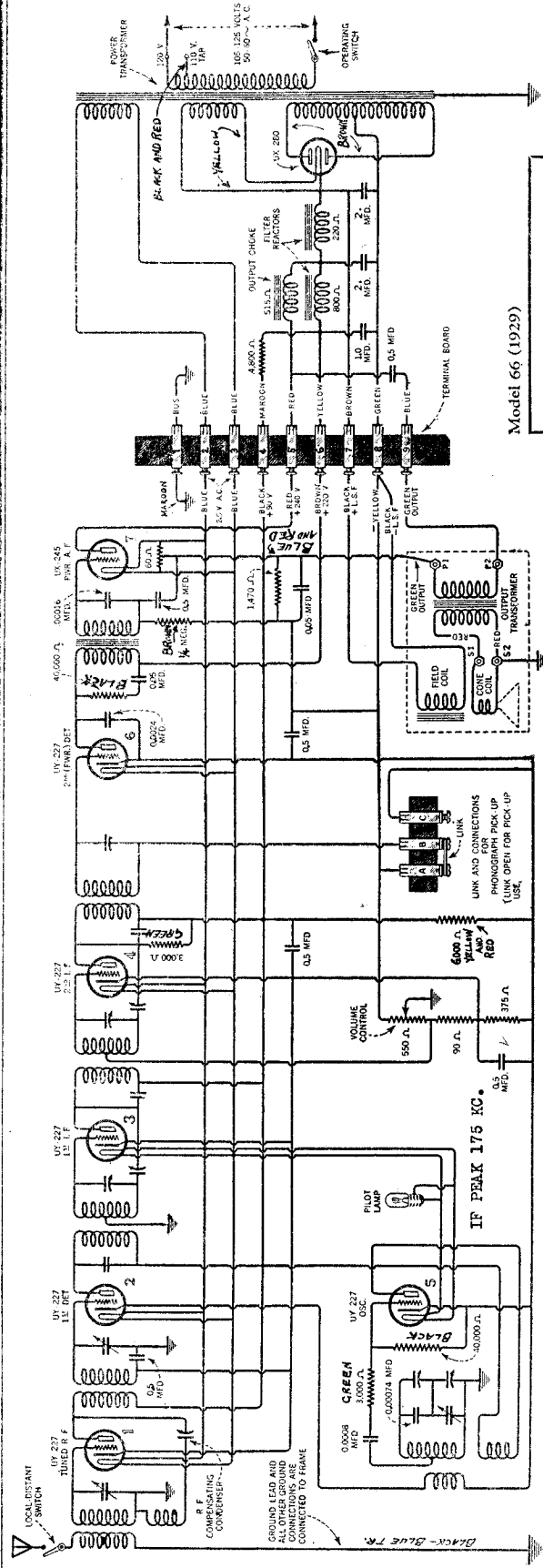


TO ANTENNA
BINDING
POST

TO ANTENNA



Internal connections of filter condensers

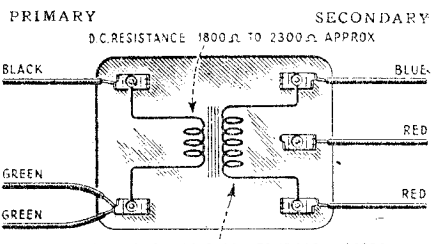
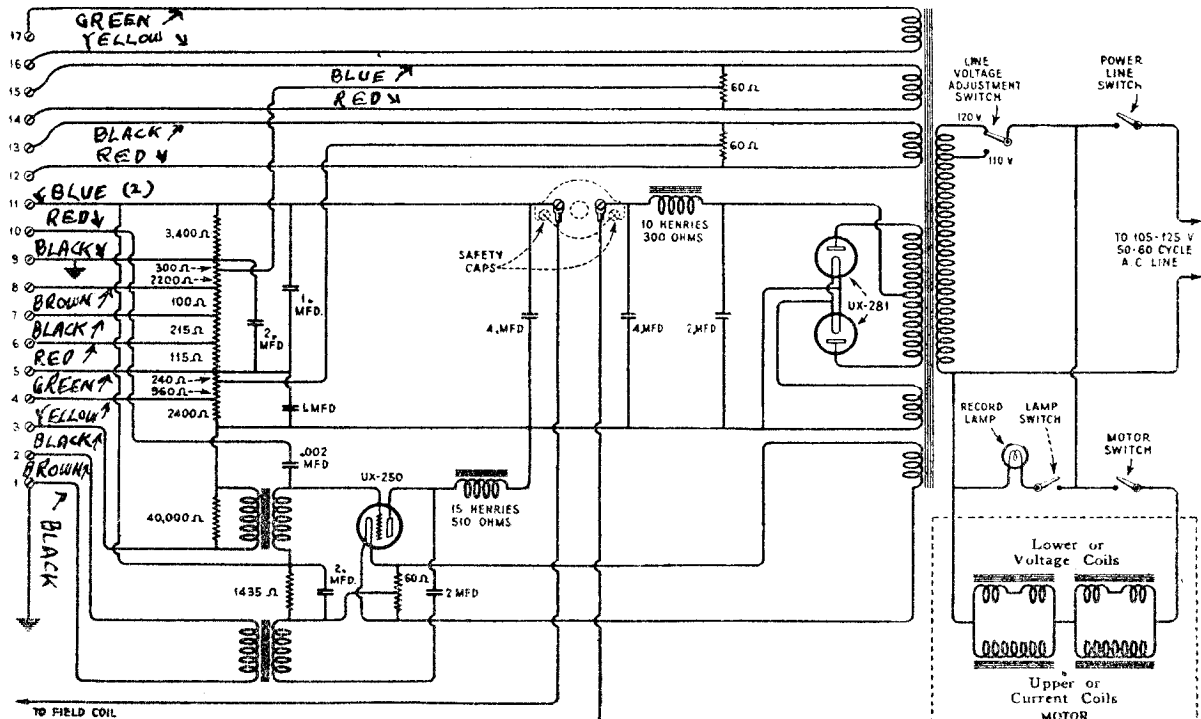
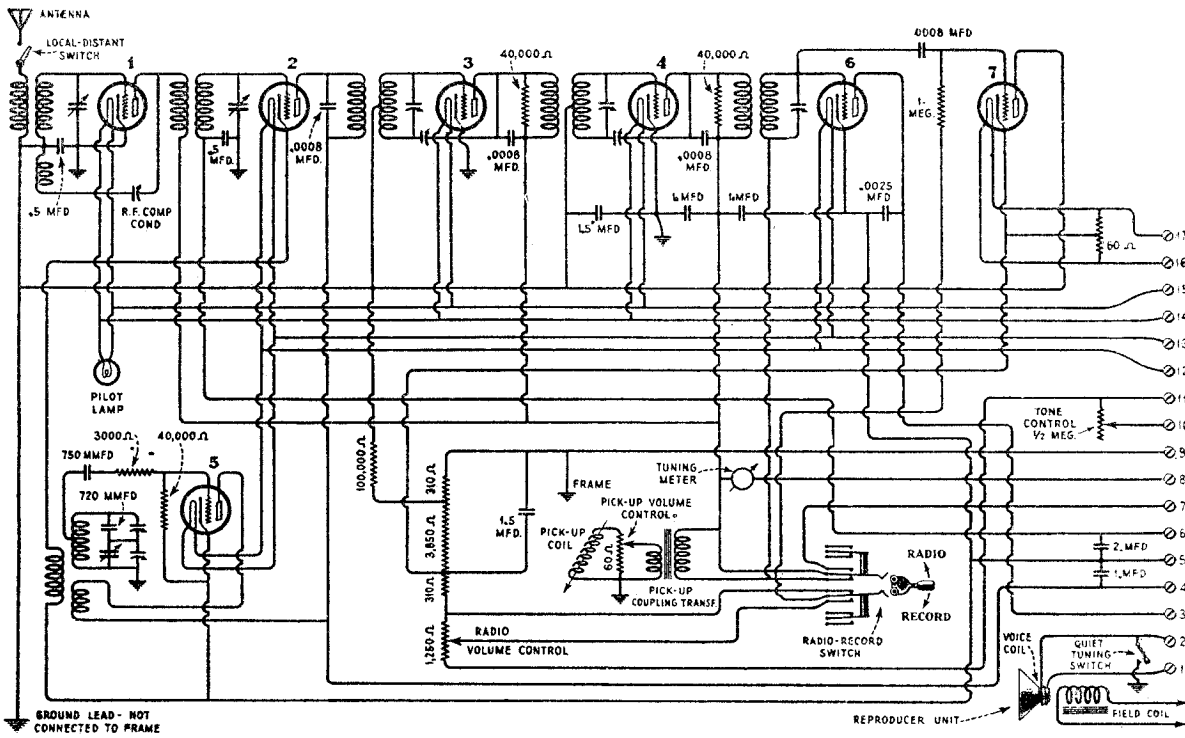


Condenser adjusting screws for I.F. transformers
RADIOLA—Model 66
 Line Voltage 120.0—Set on 120.0 Volt Tap—Volume Control Position Max

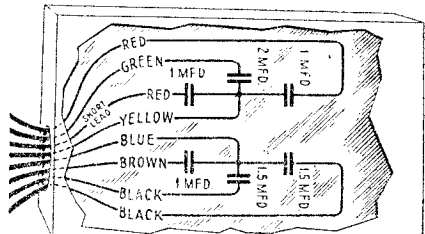
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST BY KEY, ETC.	READINGS, PLUG IN SOCKET OF SET										
			TUBE OUT				TUBE IN (DESIGN)						
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	VOLTS CONTROL (250)	CATHODE HEATER (250)	NORMAL PLATE VOLTS (250)	PLATE MA (250)	PLATE CHANGE (250)	SCREEN (250)	DIODE (250)
1	227	1st Det	2.65	83.0	2.4	80.0	3.0	24.0	4.5	3.5	4.1	-	-
2	227	1st IP	2.65	83.0	2.4	72.0	7.0	17.0	2.0	3.5	1.5	-	-
3	227	2nd IP	2.65	83.0	2.4	80.0	3.0	23.0	4.0	3.6	4.1	-	-
4	227	2nd Det	2.65	83.0	2.4	80.0	3.0	23.0	4.5	3.6	4.1	-	-
5	227	OSC.	2.65	83.0	2.4	66.0	0.0	16.0	6.4	5.3	4.1	-	-
6	227	2nd Det	2.65	237.0	2.4	256.0	29.0	17.0	1.1	1.0	1.9	-	-
7	245	AF	2.65	237.0	2.4	224.0	17.0	-	32.0	34.9	2.3	-	-
8	280	Rect.	5.2	-	5.0	250	-	-	52.0	-	-	-	-

MODEL Radiola 67
Schematic

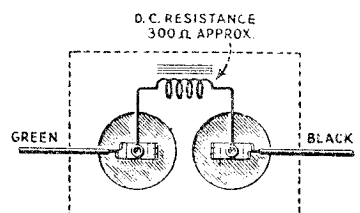
R. C. A. VICTOR CO., INC.



Internal connections of input transformer



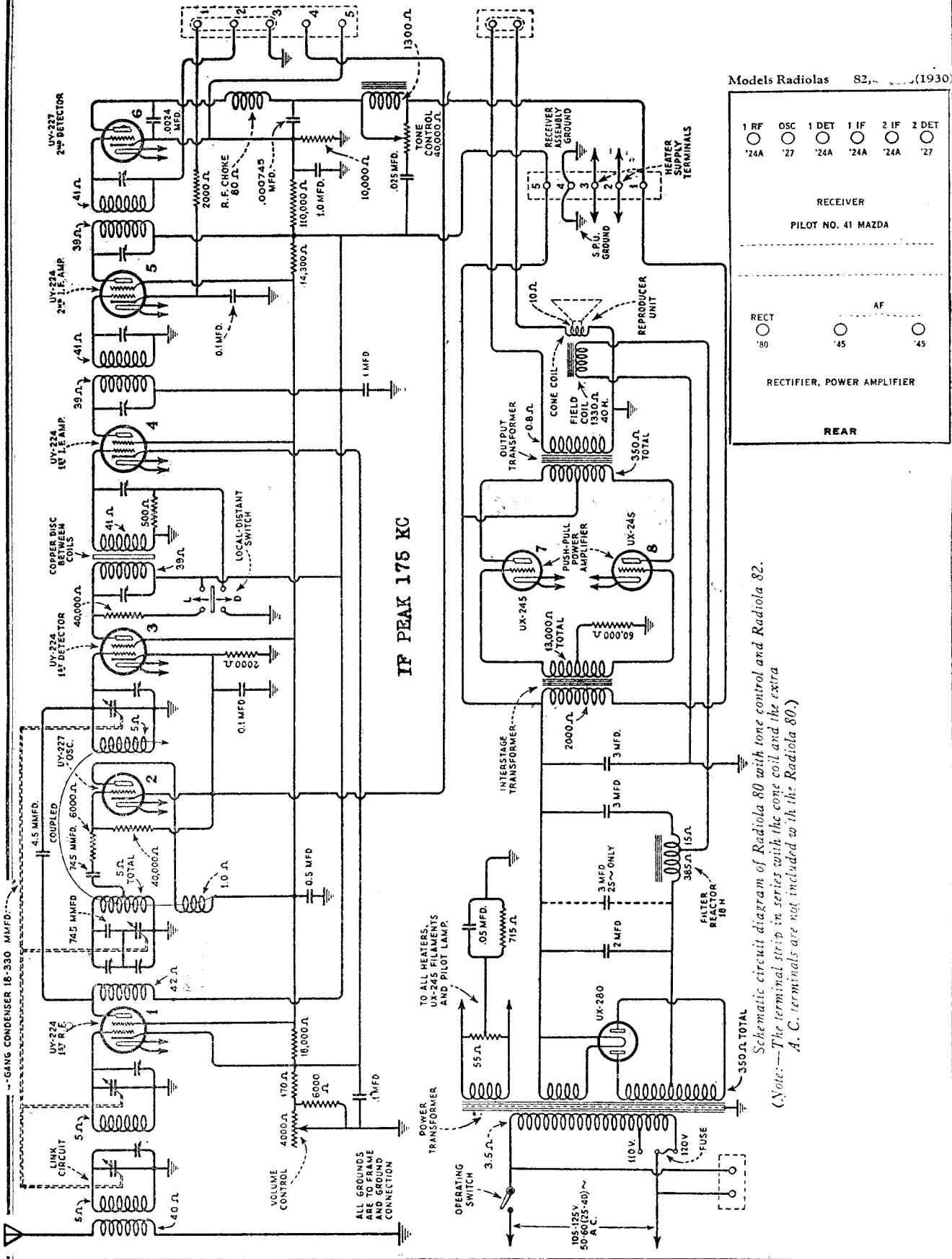
Internal connections of receiver by-pass condensers



Internal connections of filter reactor

R. C. A. VICTOR CO., INC.

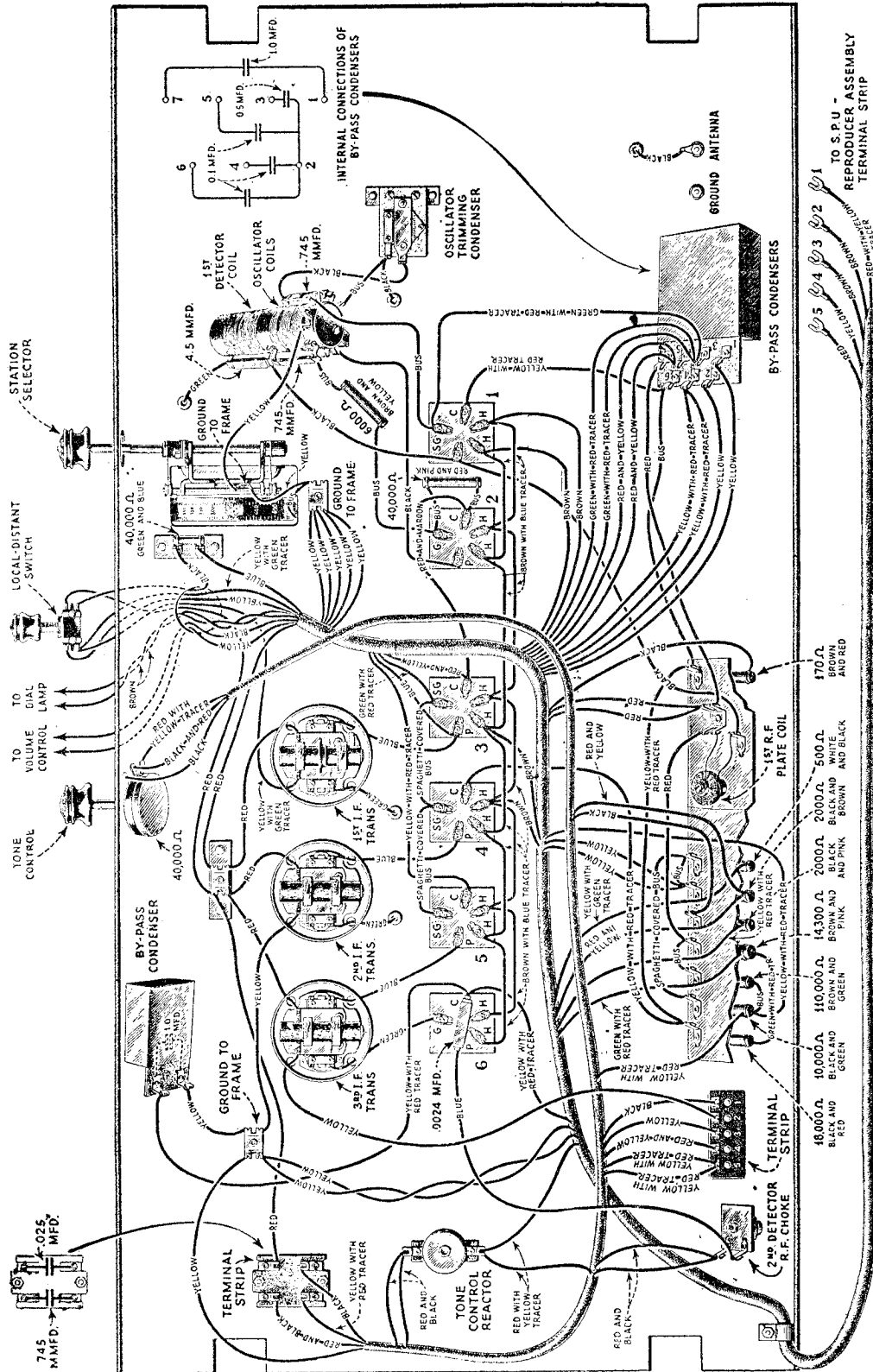
MODEL Radiola 82
Schematic



Schematic circuit diagram of Radiola 80 with tone control and Radiola 82.
(Note:—The terminal strip in series with the cone coil and the extra A. C. terminals are not included with this Radiola 80.)

MODELS Radiola 82 and 86
with Remote Control
Assembly Wiring

R. C. A. VICTOR CO., INC.



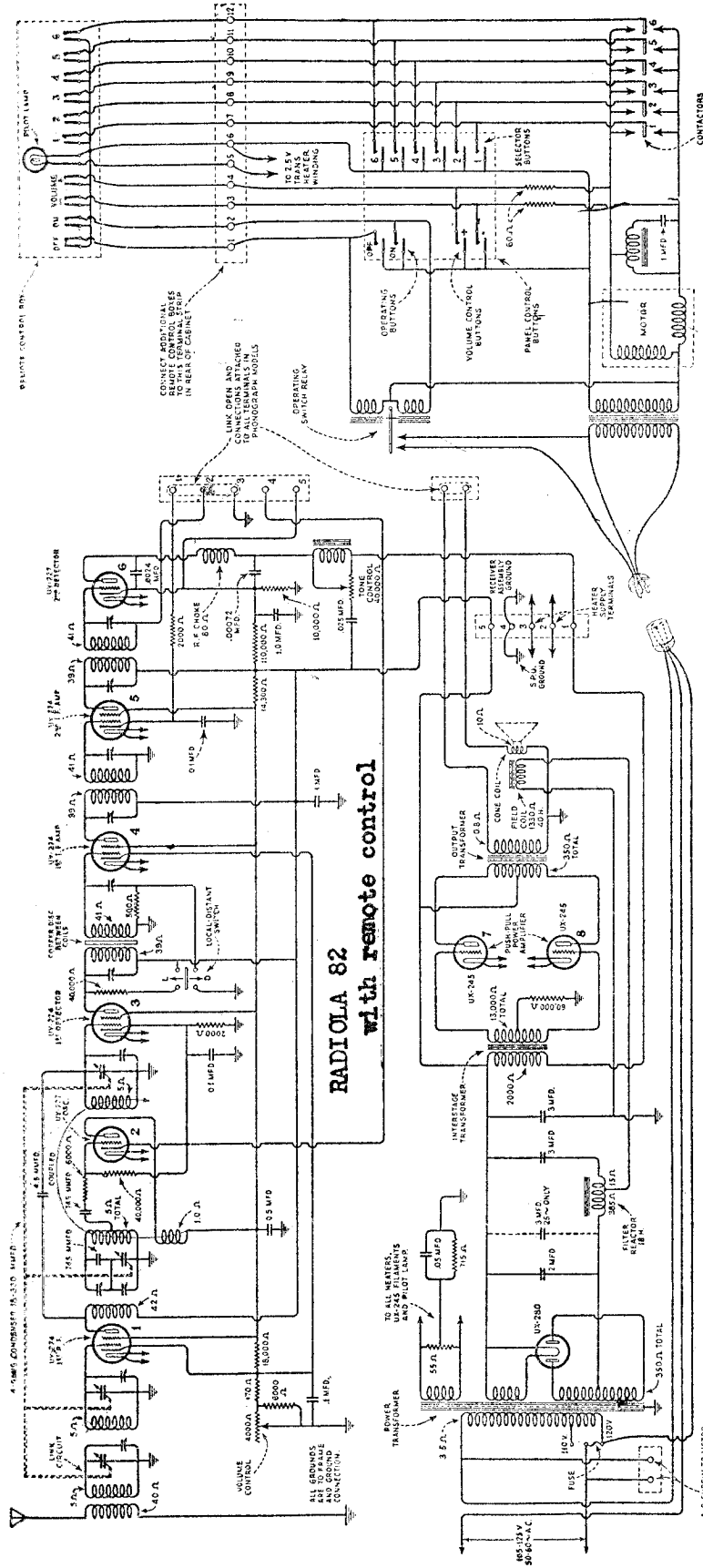
RECEIVER ASSEMBLY

RADIOLA 82 and 86 with Remote Control

TO S.P.U. -
REPRODUCER ASSEMBLY
TERMINAL STRIP

R. C. A. VICTOR CO., INC.

MODEL Radiola 82
with Remote Control
Schematic



IF PEAK 175 KC

The cable to the remote control box supplied with the remote control models is twenty five (25) feet in length. This is ample for most rooms as it is very rare that a person wishes to listen to a program at a greater distance from the loudspeaker.

If, however, it is desired to place the remote control box at a greater distance from the set, any twelve conductor cable, the wires of which are No. 14 or larger in size, may be used to splice onto the regular cable, and increase the total length up to seventy-five (75) feet. Figure 8 shows the method recommended for adding this additional cable.

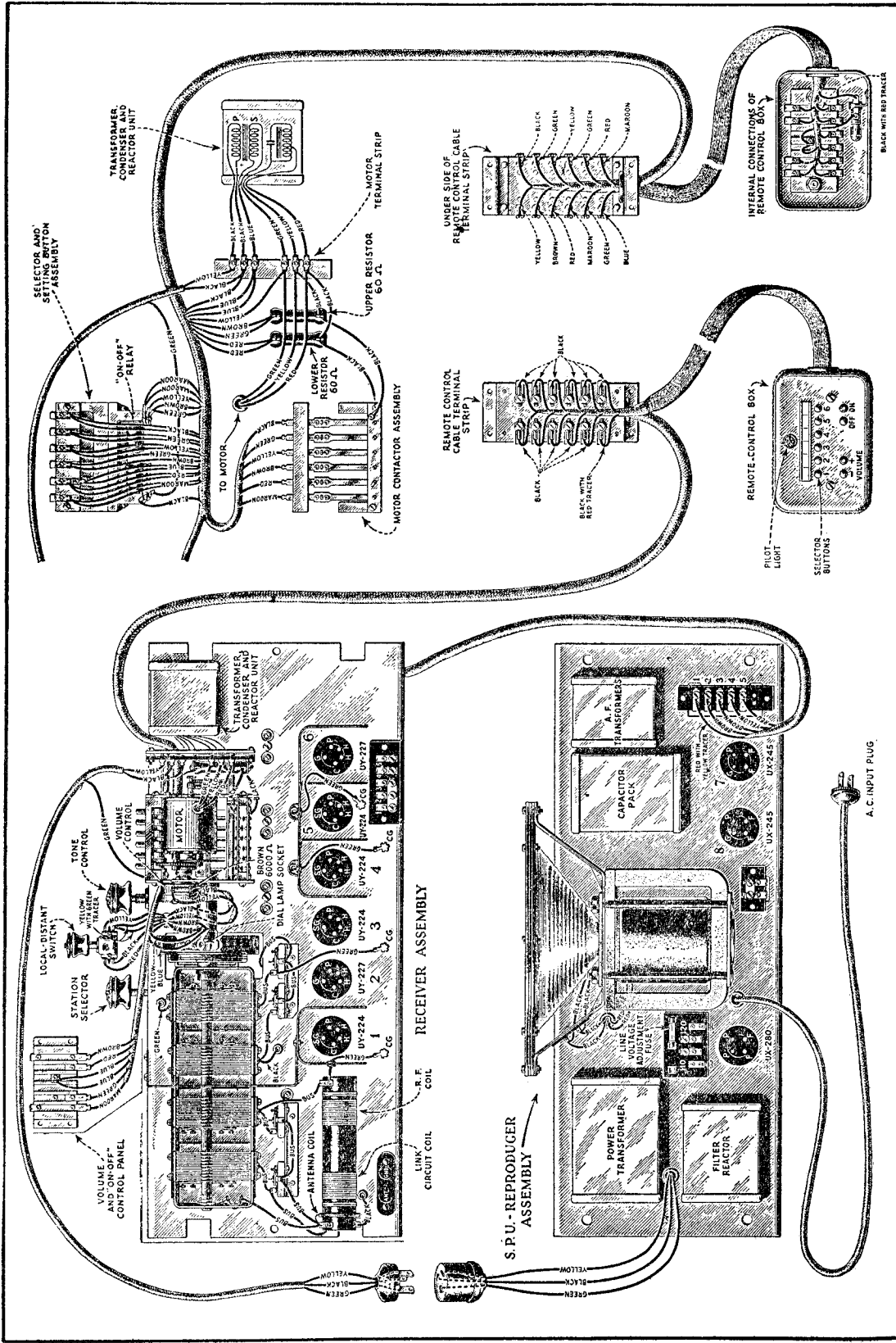
The setting of the drums is made by the pins on the front panel. These are known as the "setting buttons." The selector button is pressed and the drum is moved by the motor until the corresponding contactor is midway between the contacts. The pin will now fall in the hole in the drum if pushed in by the finger. See Figure 7. Holding the pin firmly in the hole, the desired station is then accurately tuned in by means of the manual station selector knob. After tuning the pin is then released. As the point on the opposite side of the

drum is where the diameter of the drum changes, the contactor is half way between the contacts. Pressing the selector buttons will therefore cause no movement of the motor. If another button is pressed and the drum moved, pressing the original button will always bring the drum back to the position for which it was set.

Referring to the schematic diagram, it will be noted that a common lead is used for the pilot lamp and the selector buttons in the remote control box. By doing this, when a selector button on the box is pressed, the current through the common lead is increased, likewise the voltage drop in the lead is increased. The result is that while the motor is running the pilot lamp becomes very dim. As soon as the motor stops, the lamp flashes bright, thus indicating that the motor has stopped and the station is tuned in. If the station is not then heard, it is necessary to press the + volume control button a little at a time until the desired output level is obtained.

MODELS Radiola 82 and 86
with Remote Control
Receiver Chassis

R. C. A. VICTOR CO., INC.

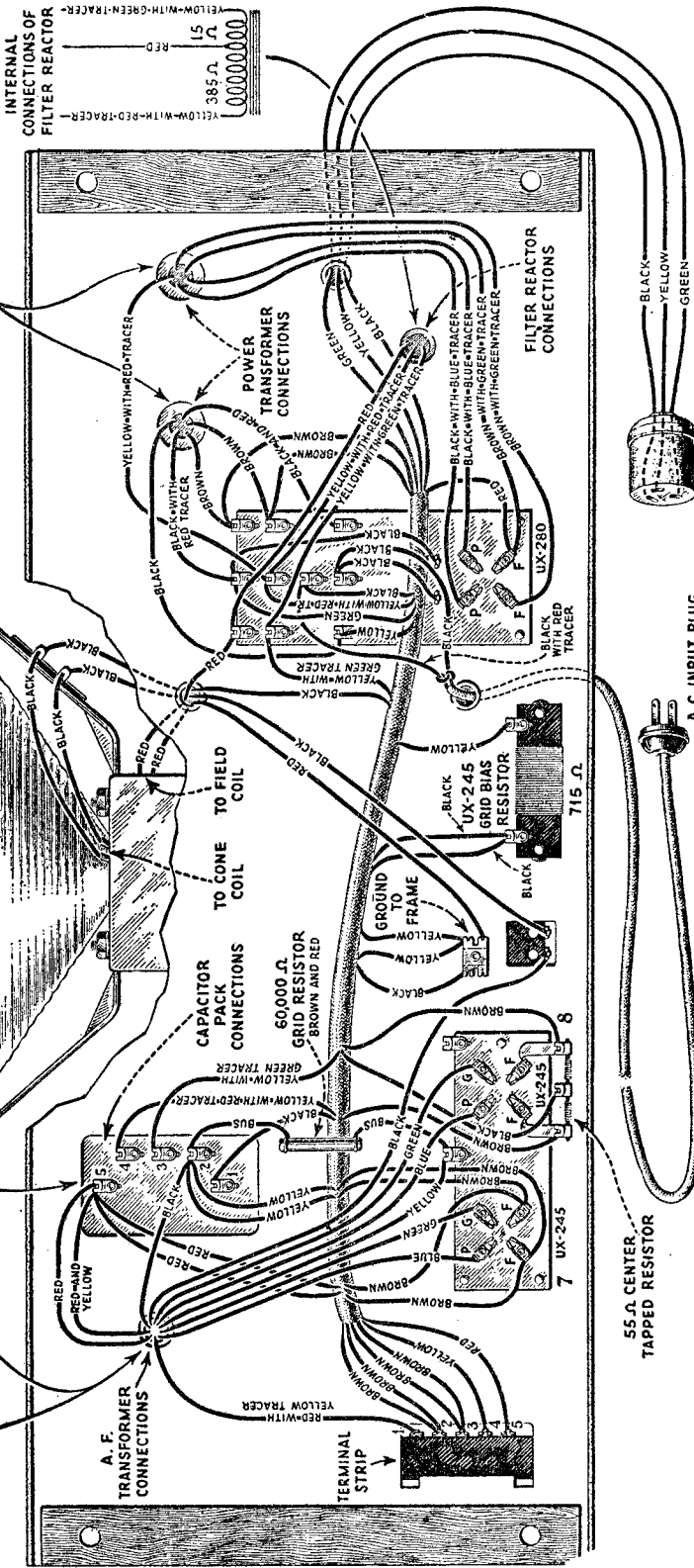
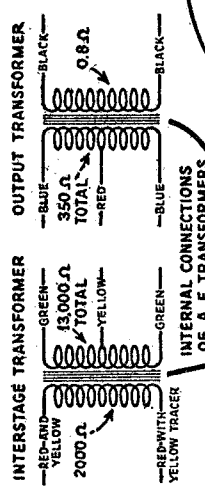
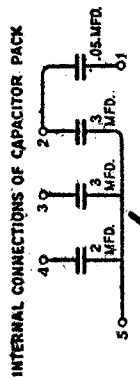
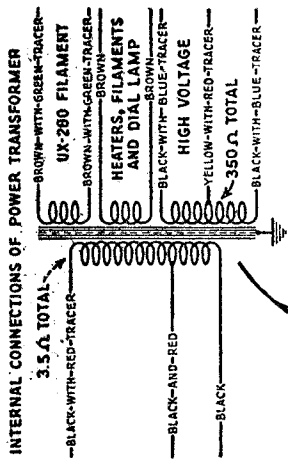


Assembly Wiring Diagram

Models Radiola 82 and 86 with Remote Control

R. C. A. VICTOR CO., INC.

MODELS Radiola 82 and 86 with Remote Control Power Unit Chassis

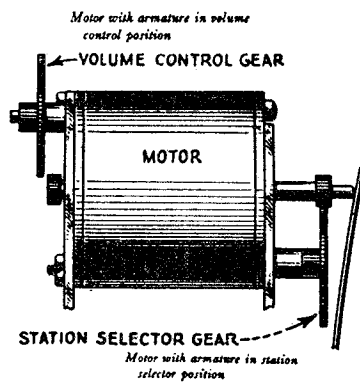
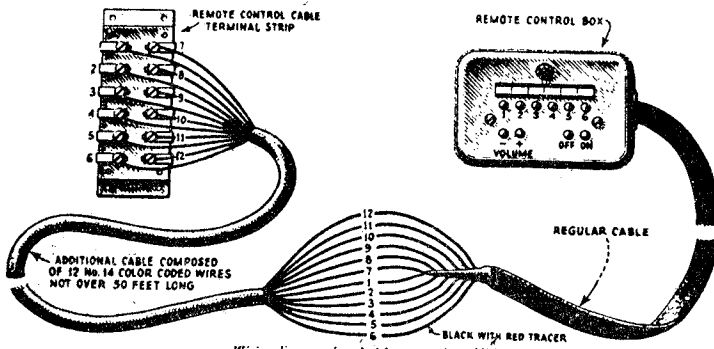
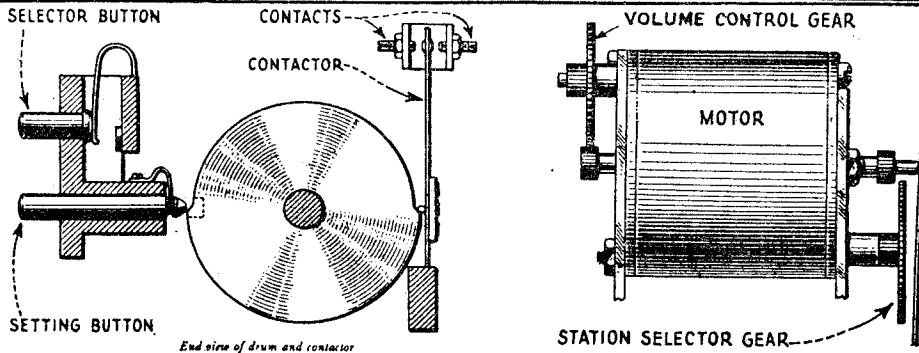
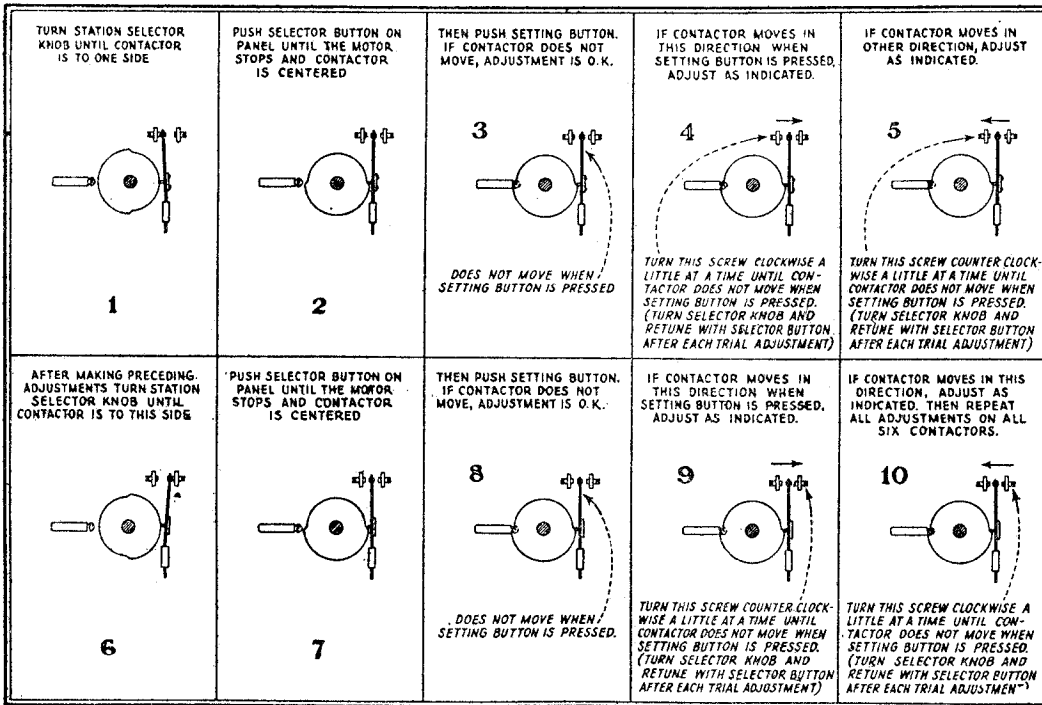


SOCKET POWER UNIT ASSEMBLY
RADIOLA Models 82 and 86 with Remote Control

R. C. A. VICTOR CO., INC. MODELS Radiola 82 and 86
with Remote Control
Remote Control Units

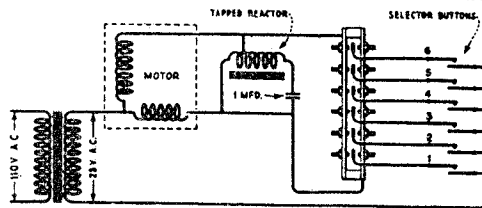
MOTOR CONTACTOR ADJUSTMENT CHART

Repeat Entire Procedure For All Contactors



This is figure 8 illustrating the method of increasing the length of the cable.

For additional remote control data, see RAE-79 service data.



R. C. A. VICTOR CO., INC.

MODEL Radiola 86
Audio Circuit
Diagrams

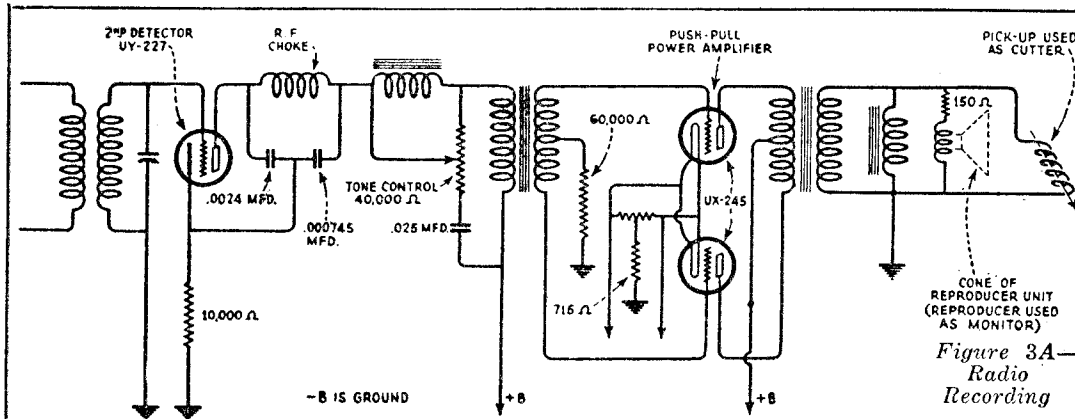


Figure 3A
Radio
Recording

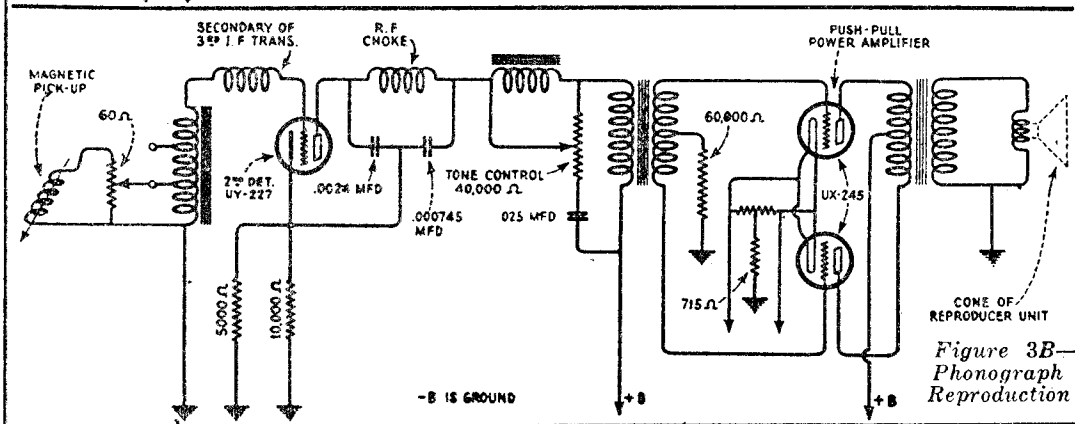


Figure 3B
Phonograph
Reproduction

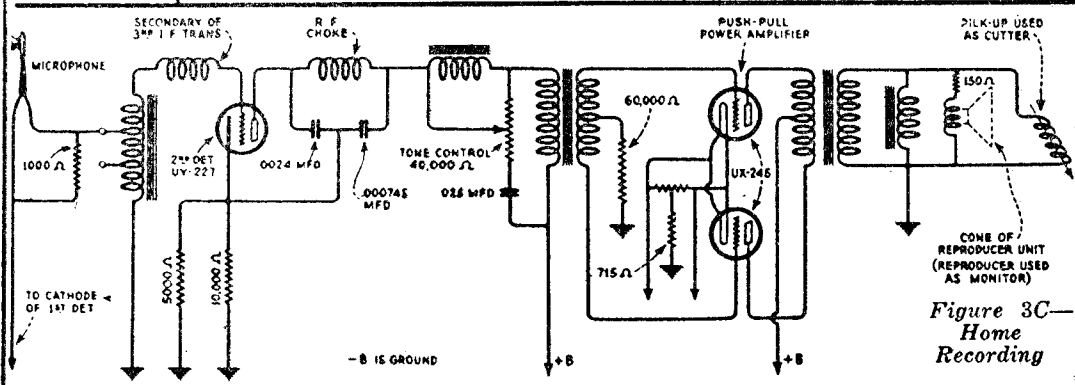


Figure 3C
Home
Recording

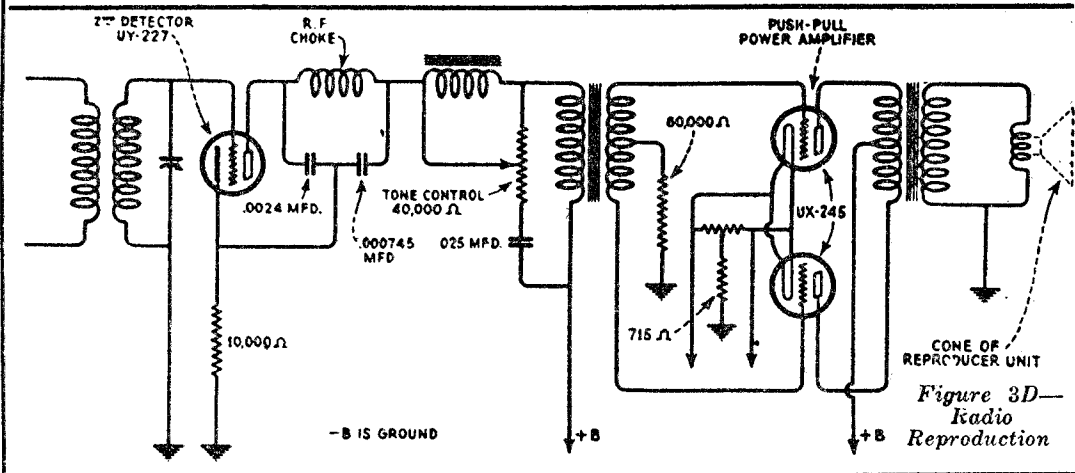
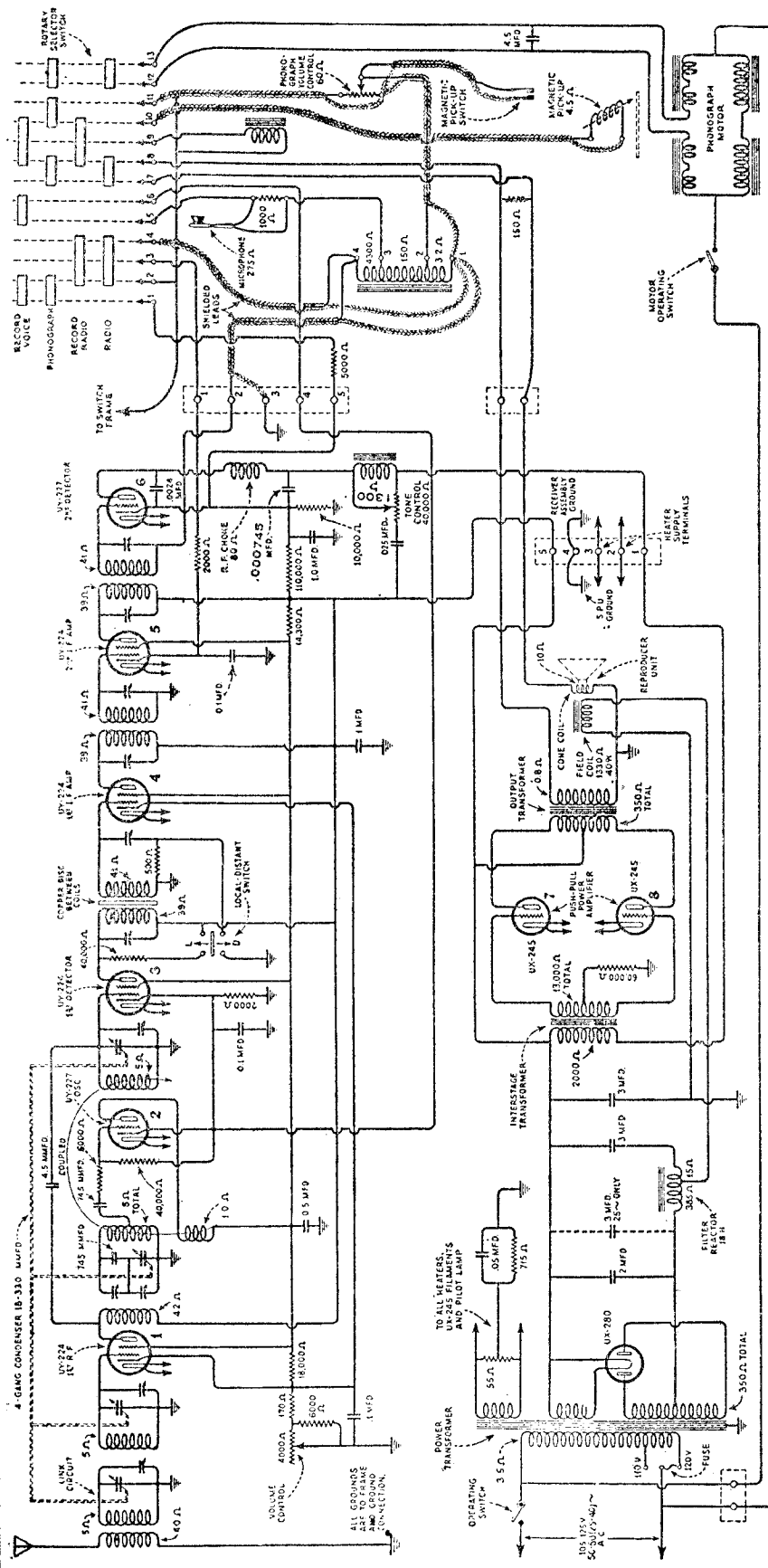


Figure 3D
Radio
Reproduction

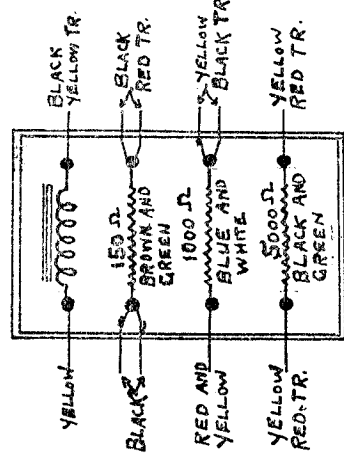
MODEL Radiola 86
Schematic

R. C. A. VICTOR CO., INC.



Rotary Switch Connections

- #1 Yellow w. Red Tr.
- #2 Yellow
- #3 Black w. Green Tr.
- #4 Yellow w. Green Tr.
- #5 Yellow w. Black Tr.
- #6 Red and Yellow
- #7 Black
- #8 Black w. Red Tr.
- #9 Black w. Yellow Tr.
- #10 Metal braid
- #11 Black and Yellow
- #12, #13 Black



Resistor and Reactor Unit

For chassis layouts see Model Radiola 82 and also Models 82-86 with remote control.

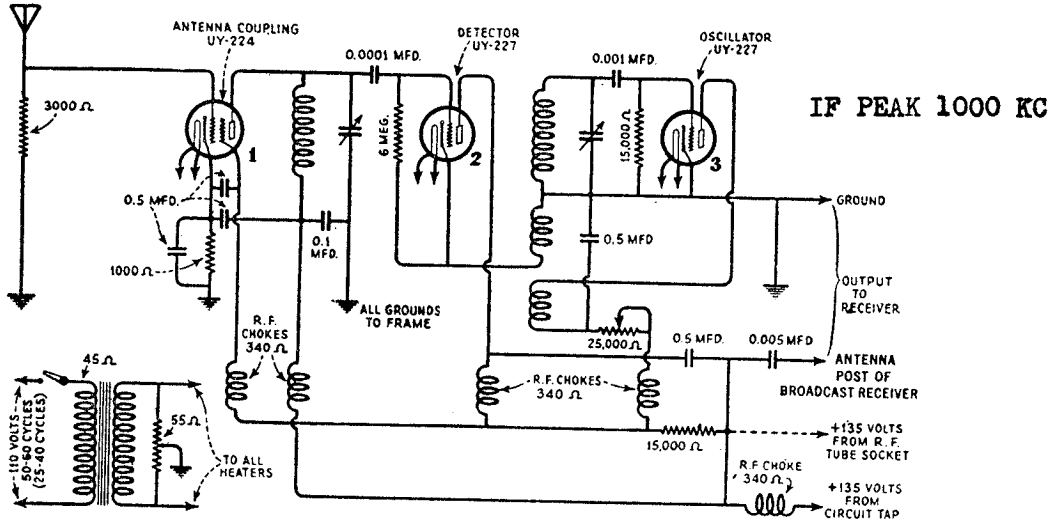
For socket layout see Model Radiola 82

For voltage data, see Model Radiola 82.

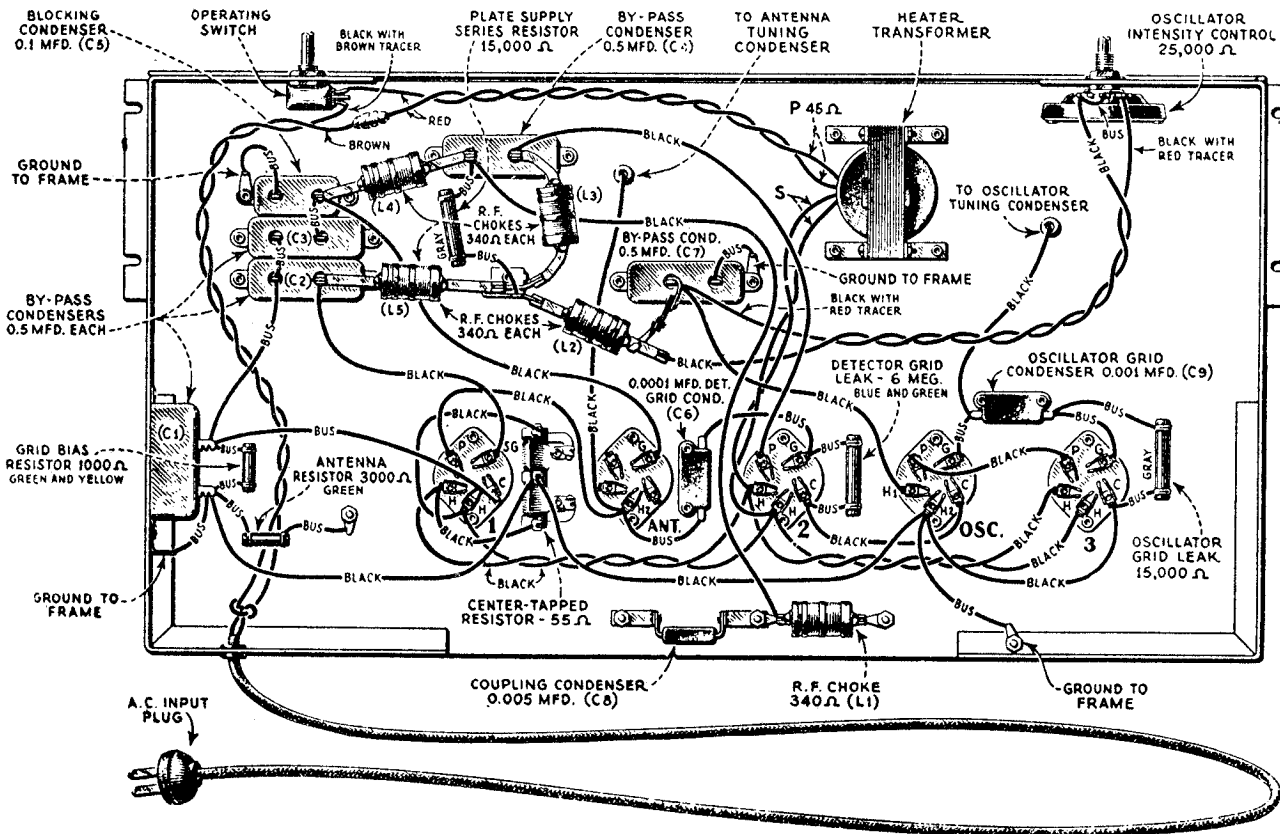
Power Consumption
Radio alone 120 watts
Combination 200 watts

R. C. A. VICTOR CO., INC.

MODEL RCA Short Wave
Adaptor
Victor SW-10
Schematic-Chassis

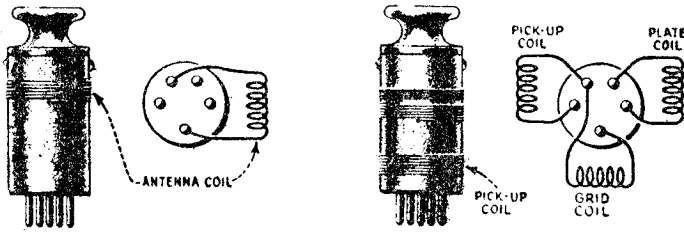


RCA RADIOLA SHORT WAVE ADAPTOR

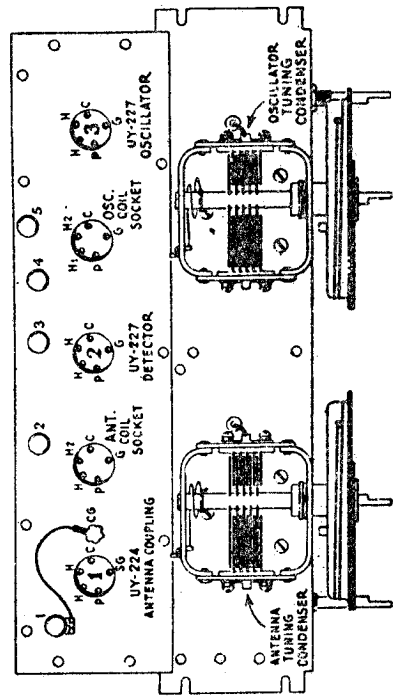


MODEL RCA Short Wave Adaptor
Victor SW-10
Voltage- Data

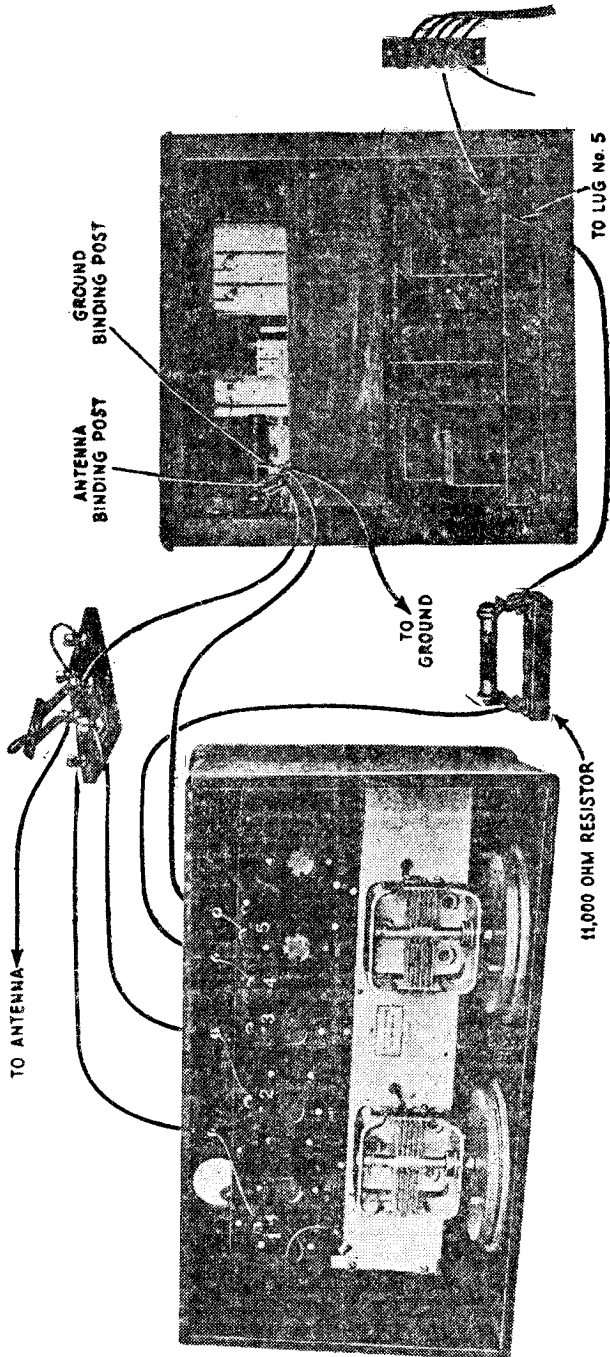
R. C. A. VICTOR CO., INC.



Internal connections of Plug-in Coils



-Test points of Short Wave Adaptor



11,000 OHM RESISTOR

Connections of Short Wave Adaptor to Radiola 80

OSCILLATOR INTENSITY CONTROL AT MAXIMUM

Socket No.	Cathode to Heater Volts D. C.	Cathode to Control Grid Volts D. C.	Cathode to Screen Grid Volts D. C.	Cathode to Plate Volts D. C.	Heater Volts A. C.	Plate Current M.A. D.C.	Screen Grid Current M.A. D.C.
1	-1	-1	43	125	2.45	1.40	0.25
2	0	-1.3*	—	50	2.45	2.0	—
3	0	-0.4*	—	45	2.45	2.8	—

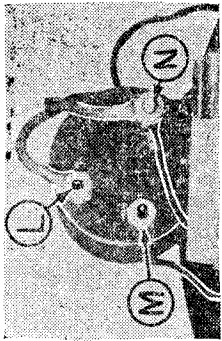
OSCILLATOR INTENSITY CONTROL AT MINIMUM

Socket No.	Cathode to Heater Volts D. C.	Cathode to Control Grid Volts D. C.	Cathode to Screen Grid Volts D. C.	Cathode to Plate Volts D. C.	Heater Volts A. C.	Plate Current M.A. D.C.	Screen Grid Current M.A. D.C.
1	-1.2	-1.2	54	127	2.45	1.25	0.28
2	0	0	—	56	2.45	3.0	—
3	0	-0.3*	—	23	2.45	1.7	—

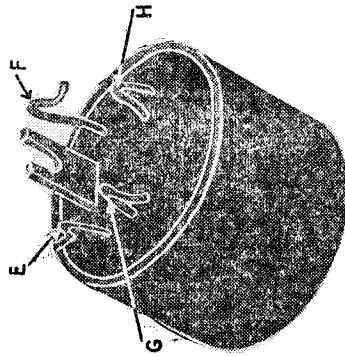
*Measured on 50 volt range. Is inaccurate because of voltmeter resistance in shunt with grid circuit resistance. Actual grid voltage is slightly higher than the readings.

R. C. A. VICTOR CO. INC.

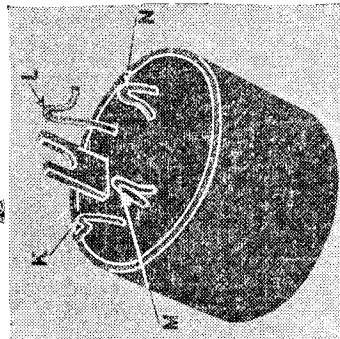
MODELS 100-A, 100-B,
103, 104-AC
speakers



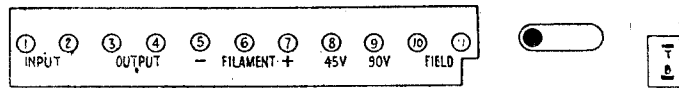
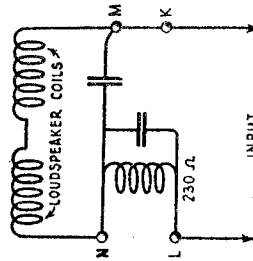
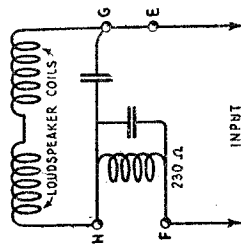
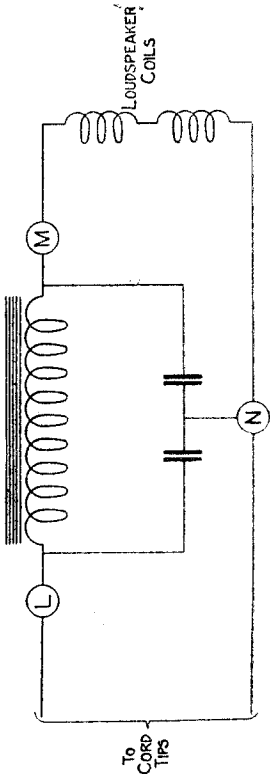
Schematic circuit diagram of RCA Loudspeaker Model 100A and photo of the filter unit



Schematic circuit of Loudspeaker 100B coils and filter and photo of filter unit



Schematic circuit of Loudspeaker 103 coils and filter and photo of filter unit

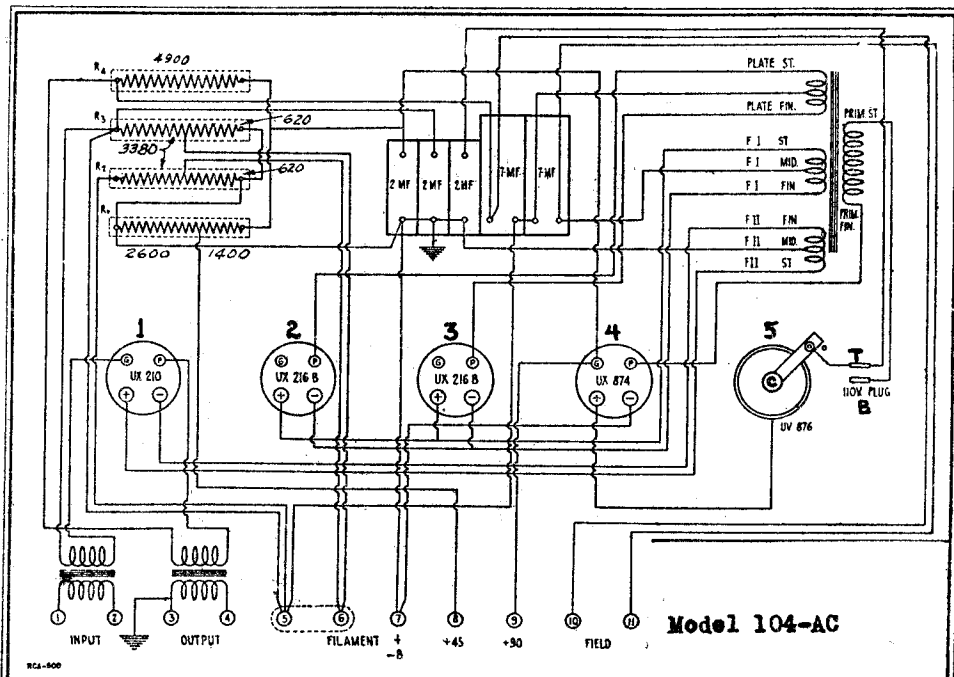


Terminal Layout

Model Radiola 104 Loudspeaker (1925)

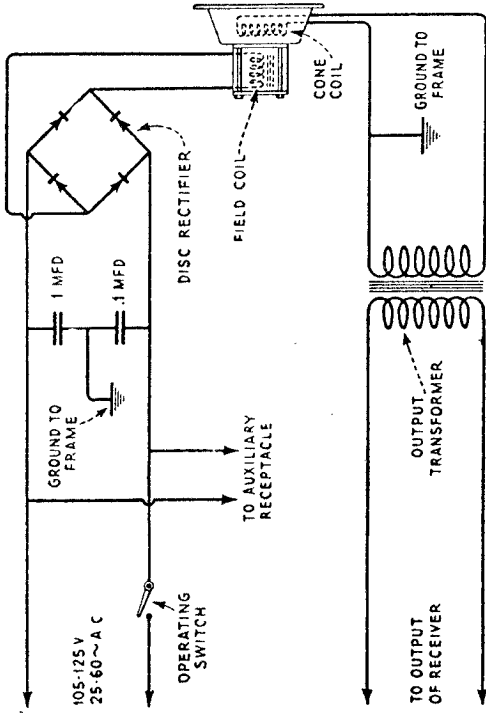
AF	RECT	RECT	VOLT. BALLAST
'10	'81	'81	REG. TUBE
			874
			OR
			UP591
			886
			OR
			80

REAR (L TO R)

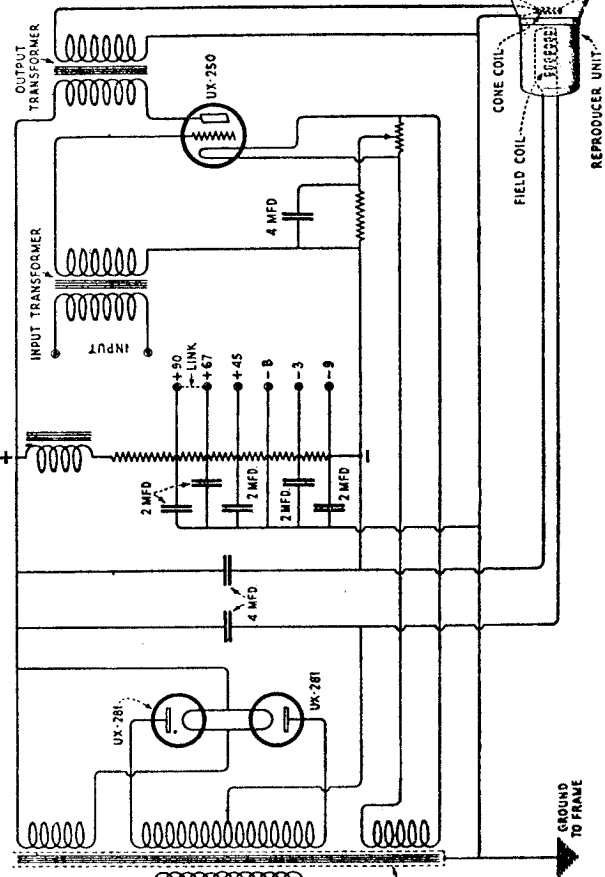


**MODELS 105, 106
Speakers**

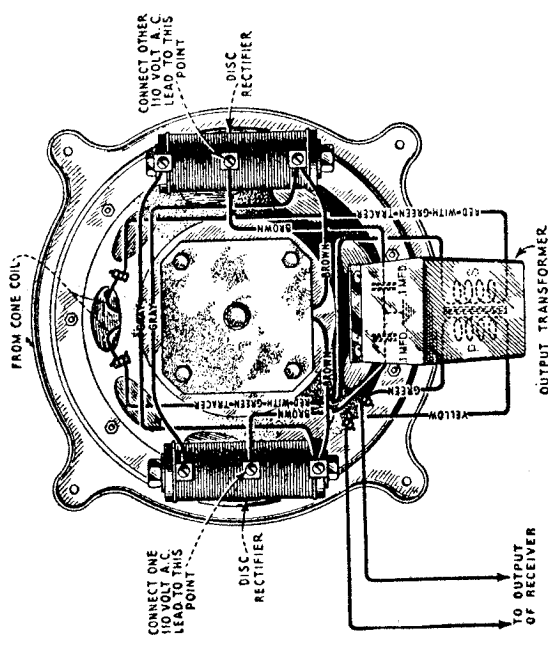
R. C. A. VICTOR CO., INC.



Schematic wiring diagram of Loudspeaker 106



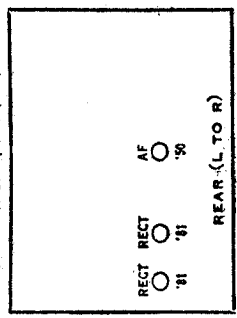
Schematic circuit diagram of RCA Loudspeaker 105.



Wiring diagram of reproducer unit 106

106 Speaker
Voltage across field coil.
With field connected 80 volts
With field disconnected 95 volts

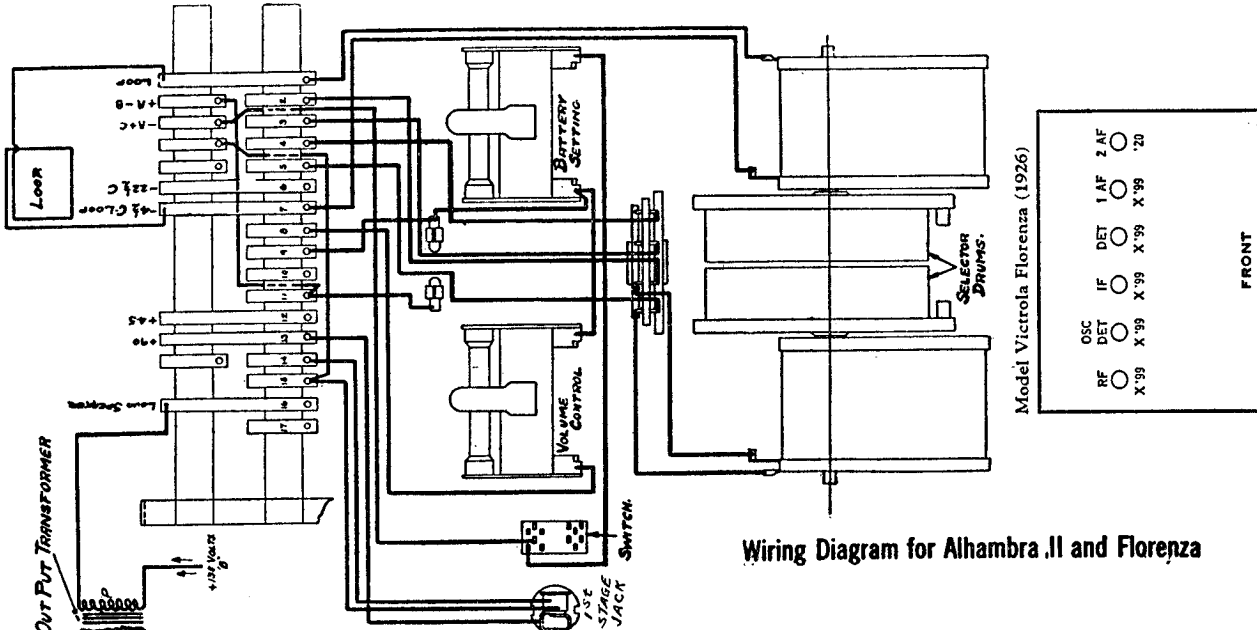
Model Radiola 105 Loudspeaker (1927)



R. C. A. VICTOR CO., INC.

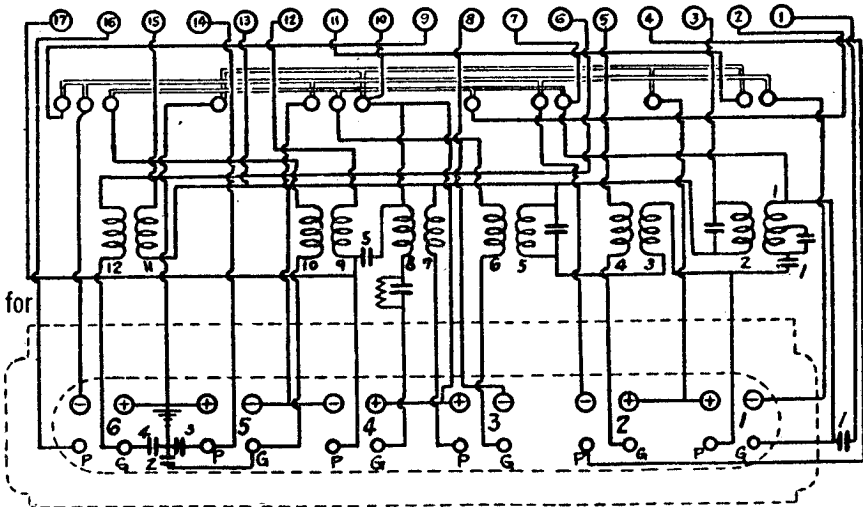
MODEL Victor Alhambra I
(7-1)

MODEL Victor Alhambra II
MODEL Victor Florenza



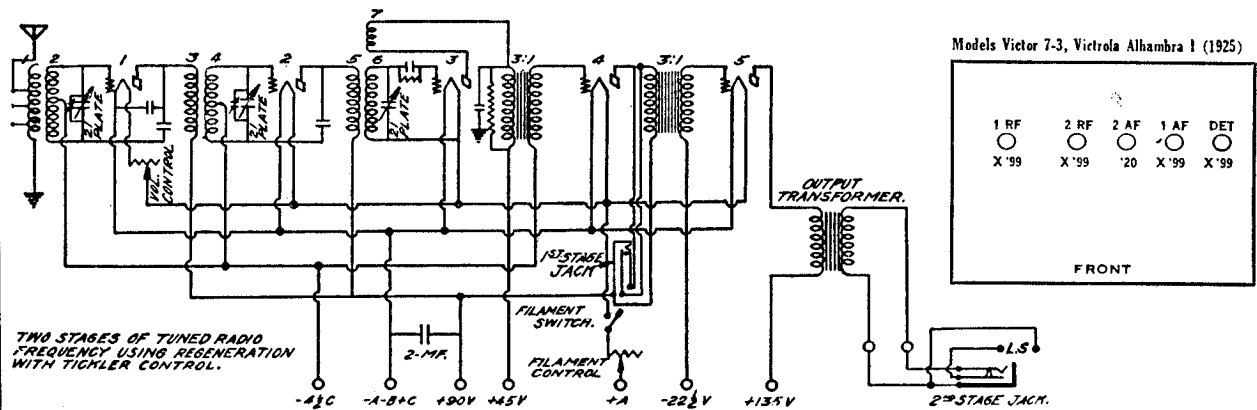
Wiring Diagram for Alhambra II and Florenza

CATACOMB TERMINALS



Radiola 25 Catacomb Continuity Diagram for

Alhambra II (7-2) and Florenza (9-1)

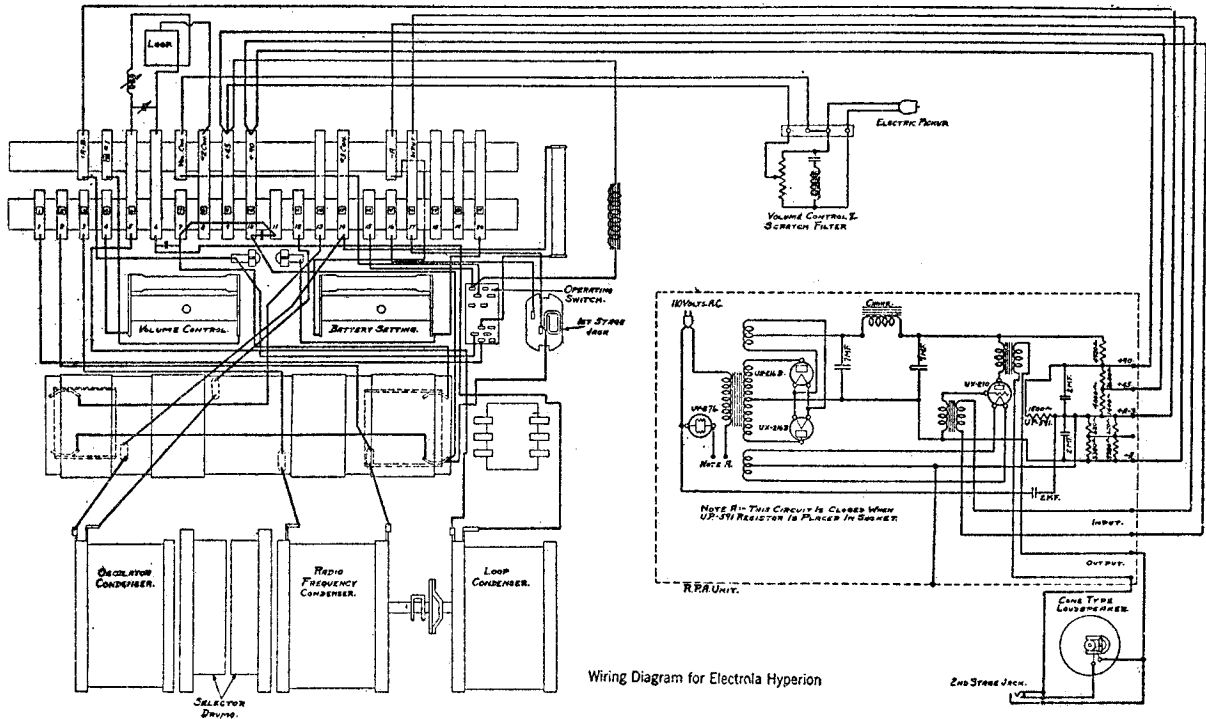


TWO STAGES OF TUNED RADIO FREQUENCY USING REGENERATION WITH TICKLER CONTROL.

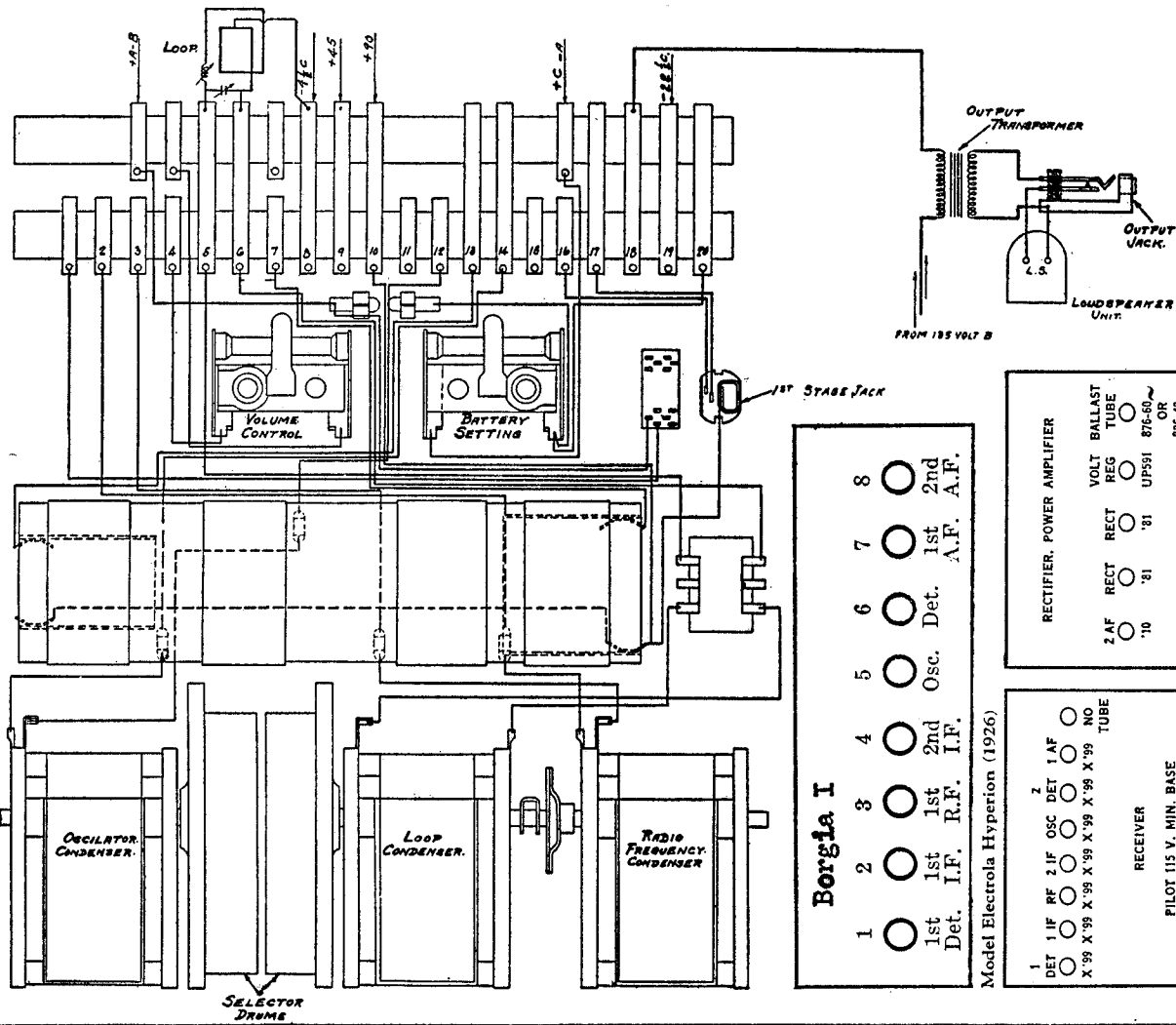
Wiring Diagram Alhambra I (7-1)

MODEL Victor Borgia I
MODEL Victor Hyperion
Electrola

R. C. A. VICTOR CO., INC.



Wiring Diagram for Electrola Hyperion



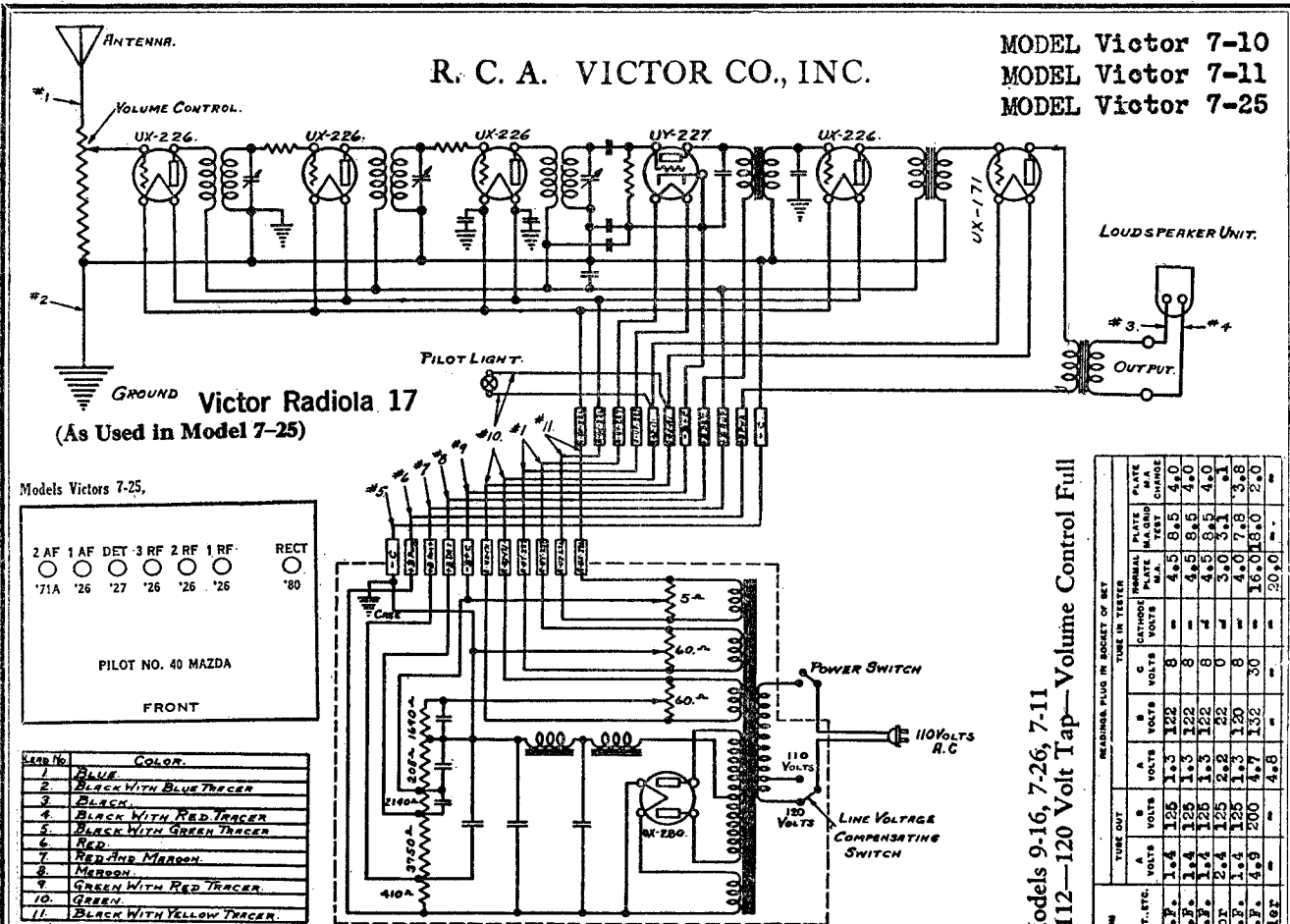
- Borgia I**
- 1 1st Det. I.F., R.F., I.F.
 - 2 1st I.F.
 - 3 2nd I.F.
 - 4 1st Det. A.F.
 - 5 2nd Det. A.F.
 - 6 1st A.F.
 - 7 2nd A.F.
 - 8 Rectifier, Power Amplifier

Model Electrola Hyperion (1926)

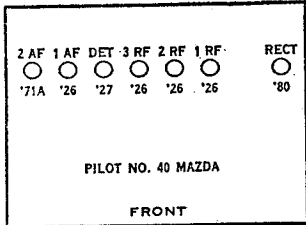
1	DET 1 IF	RF	2 IF	OSC	DET	1 AF	NO. TUBE
2	X '99	X '99	X '99	X '99	X '99	X '99	X '99
3	RECEIVER						
4	PILOT 115 V. MIN. BASE						
5	FRONT						
6	REAR (L TO R)						
7	2 AF	RECT	RECT	VOLT REG	BALLAST TUBE		
8	'10	'81	'81	UP591	876-50	OR	886-40

R. C. A. VICTOR CO., INC.

MODEL Victor 7-10
 MODEL Victor 7-11
 MODEL Victor 7-25



Models Victors 7-25,



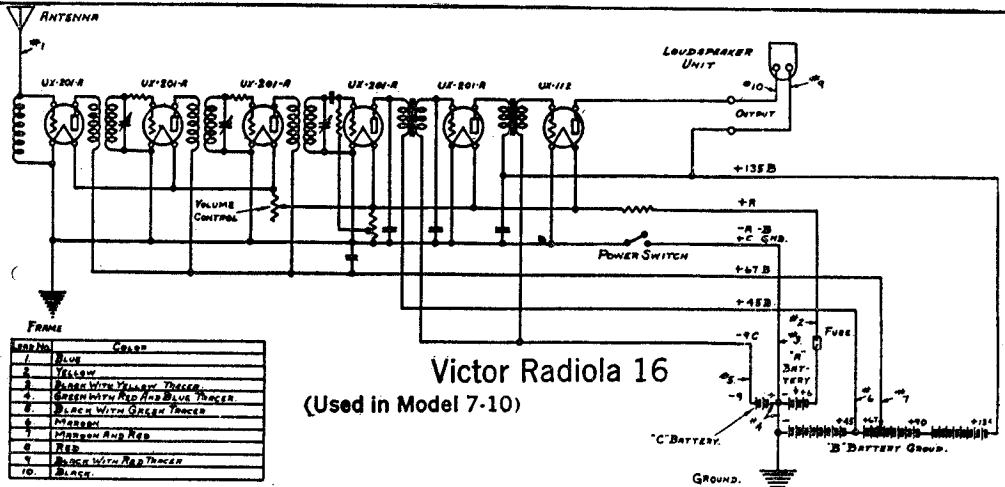
PILOT NO. 40 MAZDA

FRONT

LEAD NO.	COLOR
1	BLUE
2	BLACK WITH BLUE TRACER
3	BLACK
4	BLACK WITH RED TRACER
5	BLACK WITH GREEN TRACER
6	RED
7	RED AND MAROON
8	MAROON
9	GREEN WITH RED TRACER
10	GREEN
11	BLACK WITH YELLOW TRACER

VICTOR—Models 9-16, 7-26, 7-11
 Line Voltage 112—120 Volt Tap—Volume Control Full

TYPE OF TUBE IN ORDER	POSITION IN SET (1ST, 2ND, DET., ETC.)	TUNE OUT		TUNE IN		TUNE IN TESTER		READINGS PLUS IN SOCKET OF SET		
		VOLTS	MA	VOLTS	MA	VOLTS	MA	PLATE M.A. GRID TEST CHOHLE	PLATE M.A. GRID TEST CHOHLE	
226	1st. R.F.	1.4	1.25	1.3	1.22	8	—	4.5	8.5	4.0
226	2nd. R.F.	1.4	1.25	1.3	1.22	8	—	4.5	8.5	4.0
226	3rd. R.F.	1.4	1.25	1.3	1.22	8	—	4.5	8.5	4.0
227	Detector	2.4	1.25	2.2	2.2	0	—	3.0	5.1	3.1
226	1st. A.F.	1.4	1.25	1.3	1.20	0	—	4.0	7.8	3.8
171A	2nd. A.F.	4.9	2.00	4.7	1.52	50	—	16.0	18.0	2.0
280	Rectifier	—	—	—	—	—	—	—	—	—

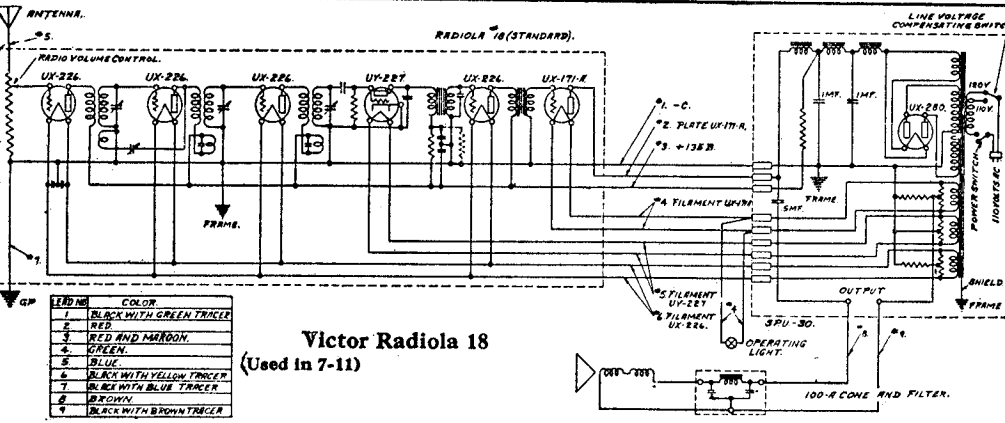
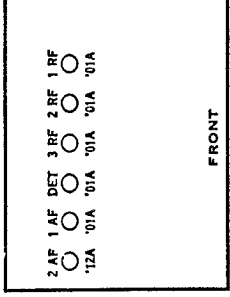


Victor Radiola 16

(Used in Model 7-10)

LEAD NO.	COLOR
1	BLUE
2	YELLOW
3	BLACK WITH YELLOW TRACER
4	BLACK WITH RED AND BLUE TRACER
5	BLACK WITH GREEN TRACER
6	MAROON
7	MAROON AND RED
8	RED
9	BLACK WITH RED TRACER
10	BLACK

Models Victors R16, 7-10 (1925)

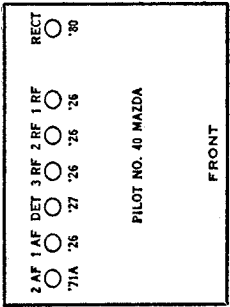


Victor Radiola 18

(Used in 7-11)

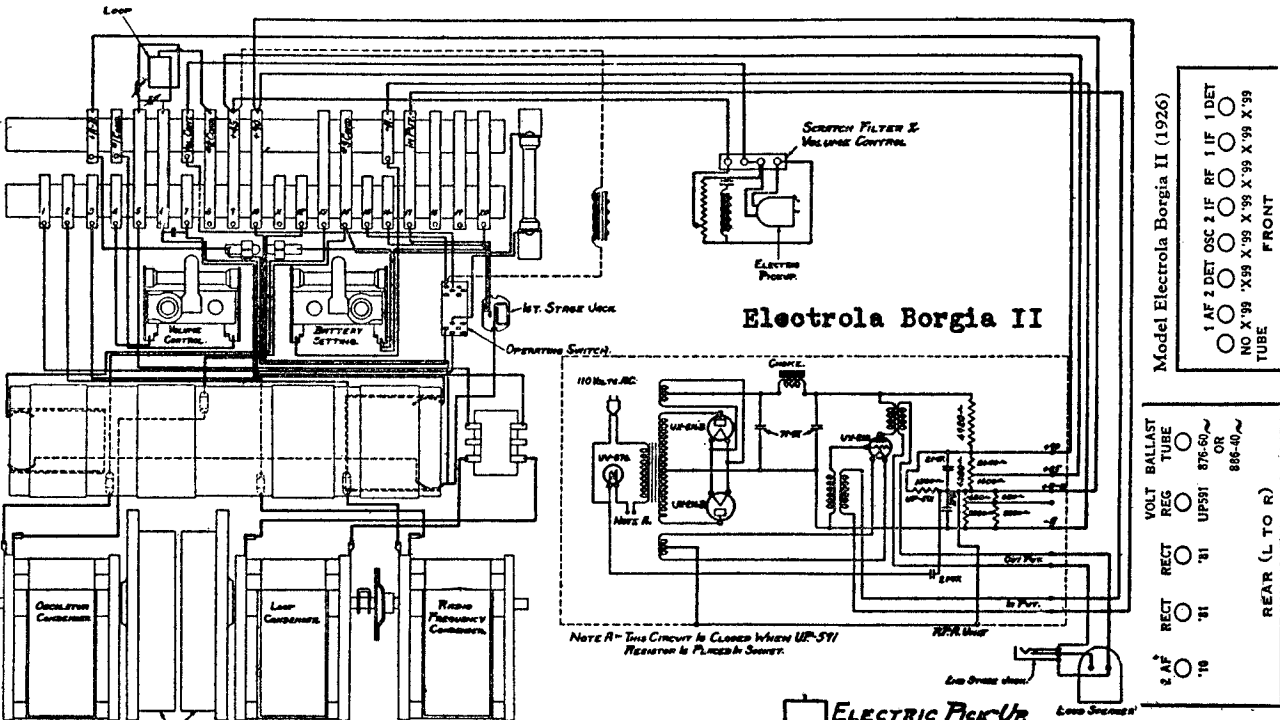
LEAD NO.	COLOR
1	BLACK WITH GREEN TRACER
2	RED
3	RED AND MAROON
4	GREEN
5	BLUE
6	BLACK WITH YELLOW TRACER
7	BLACK WITH BLUE TRACER
8	BROWN
9	BLACK WITH BROWN TRACER

Models Victor 7-11,



MODEL Victor Borgia II
 MODEL Victor Tuscany
 MODEL Victor Cromwell

R. C. A. VICTOR CO., INC.



Model Electrola Borgia II (1926)

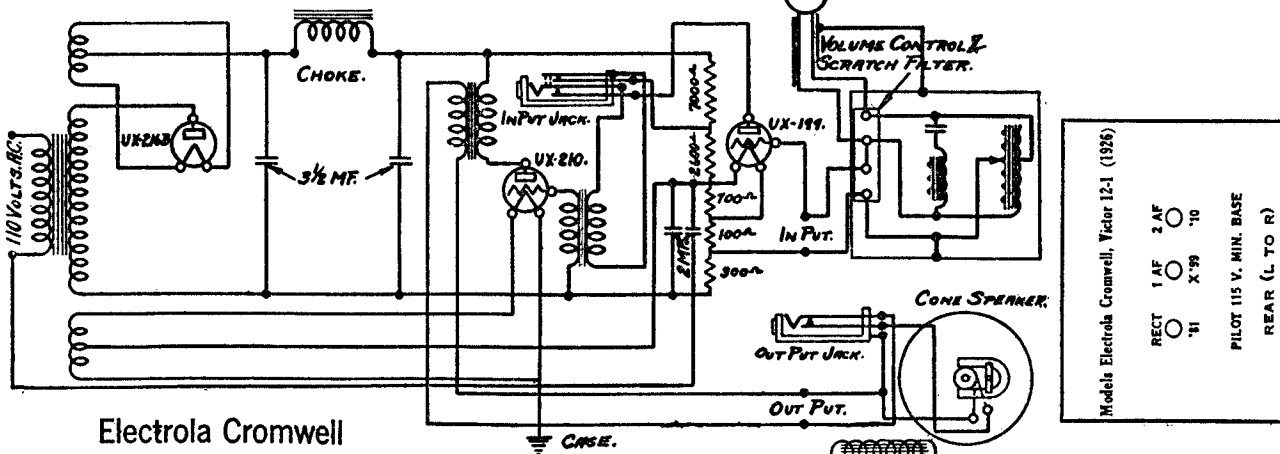
1 AF	2 DET	OSC	2 IF	RF	1 IF	1 DET
○	○	○	○	○	○	○
NO X '99	X '99	X '99	X '99	X '99	X '99	X '99

TUBE FRONT

VOLT BALLAST
 REG TUBE

RECT	RECT	RECT	RECT
○	○	○	○
'51	'31	UP581	875-60~
OR			885-40~

REAR (L. TO R.)

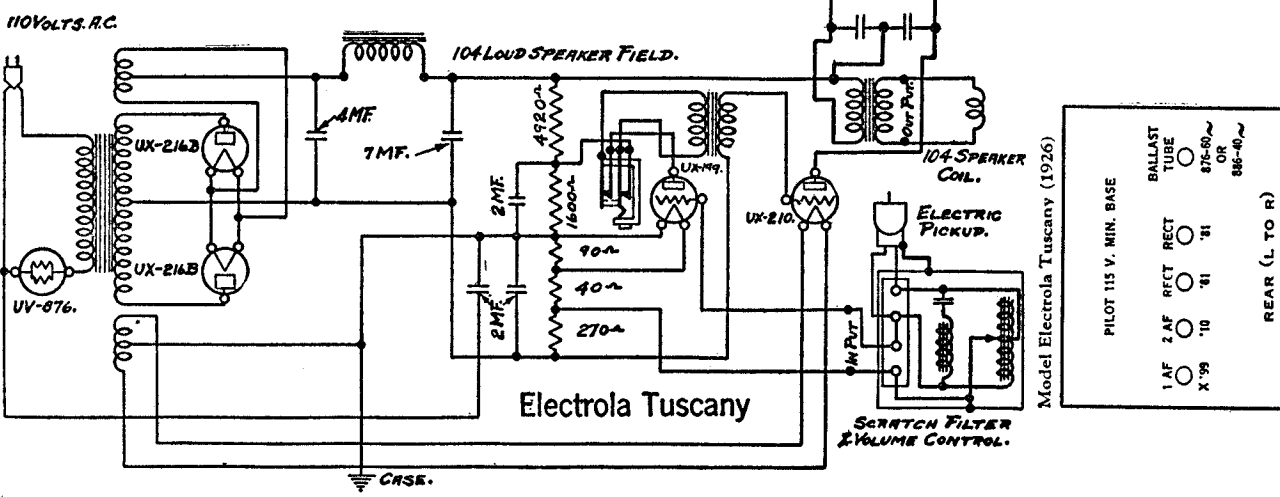


Model's Electrola Cromwell, Victor 12-1 (1925)

RECT	1 AF	2 AF
○	○	○
'51	X '99	'10

PILOT 115 V. MIN. BASE

REAR (L. TO R.)



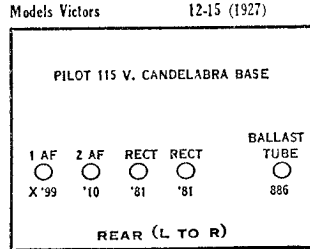
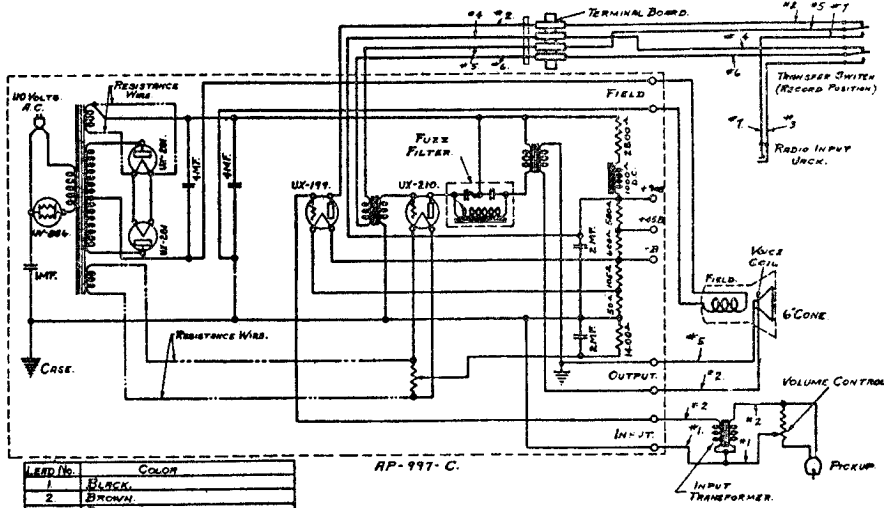
Model Electrola Tuscany (1926)

PILOT 115 V. MIN. BASE	BALLAST TUBE
1 AF	2 AF
○	○
X '99	'10
○	○
X '99	'51
○	○
X '99	875-60~
○	885-40~

REAR (L. TO R.)

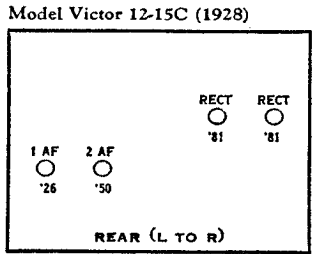
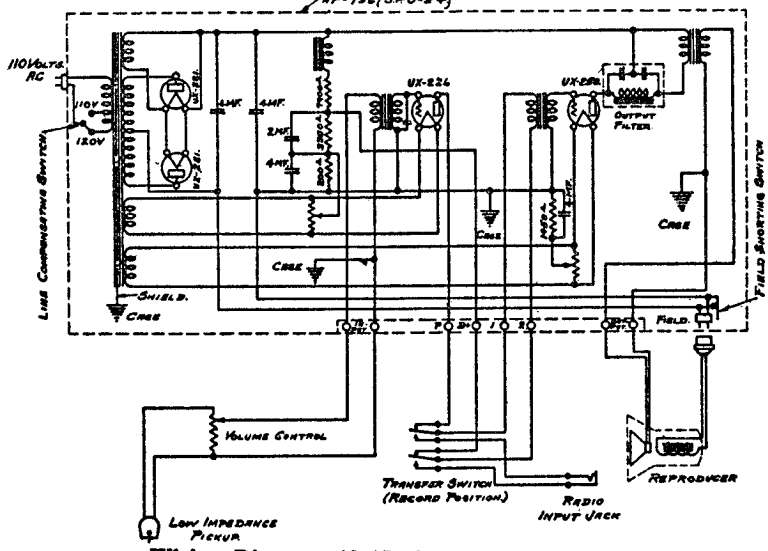
R. C. A. VICTOR CO., INC.

MODEL Victor 12-15
 MODEL Victor 12-15-C
 MODEL Victor E-35

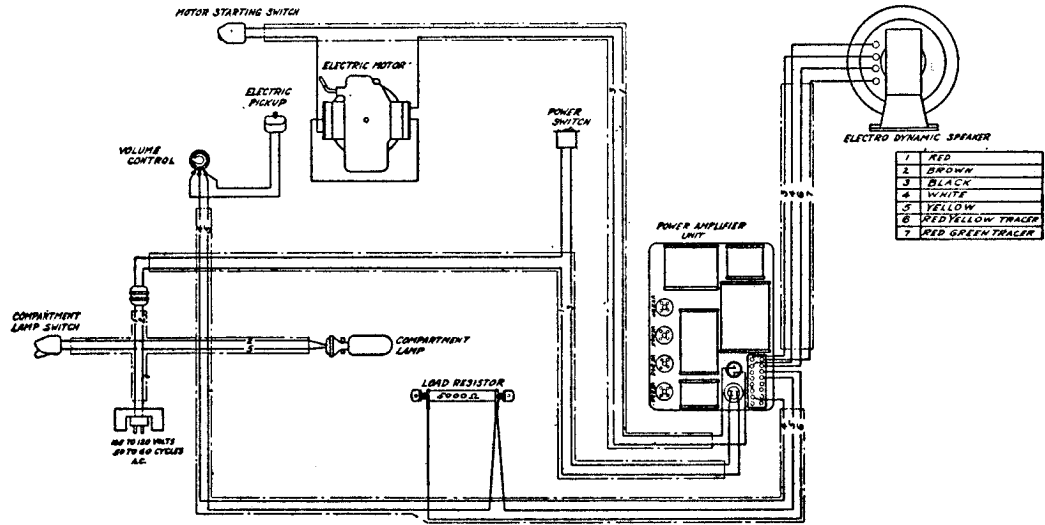


LEAD No.	COLOR
1	BLACK
2	BROWN
3	RED
4	RED AND MAROON
5	BLACK WITH BROWN TRACER
6	BLACK WITH RED TRACER
7	BROWN WITH WHITE TRACER

Wiring Diagram of 12-15



Wiring Diagram 12-15 above serial No. 2600

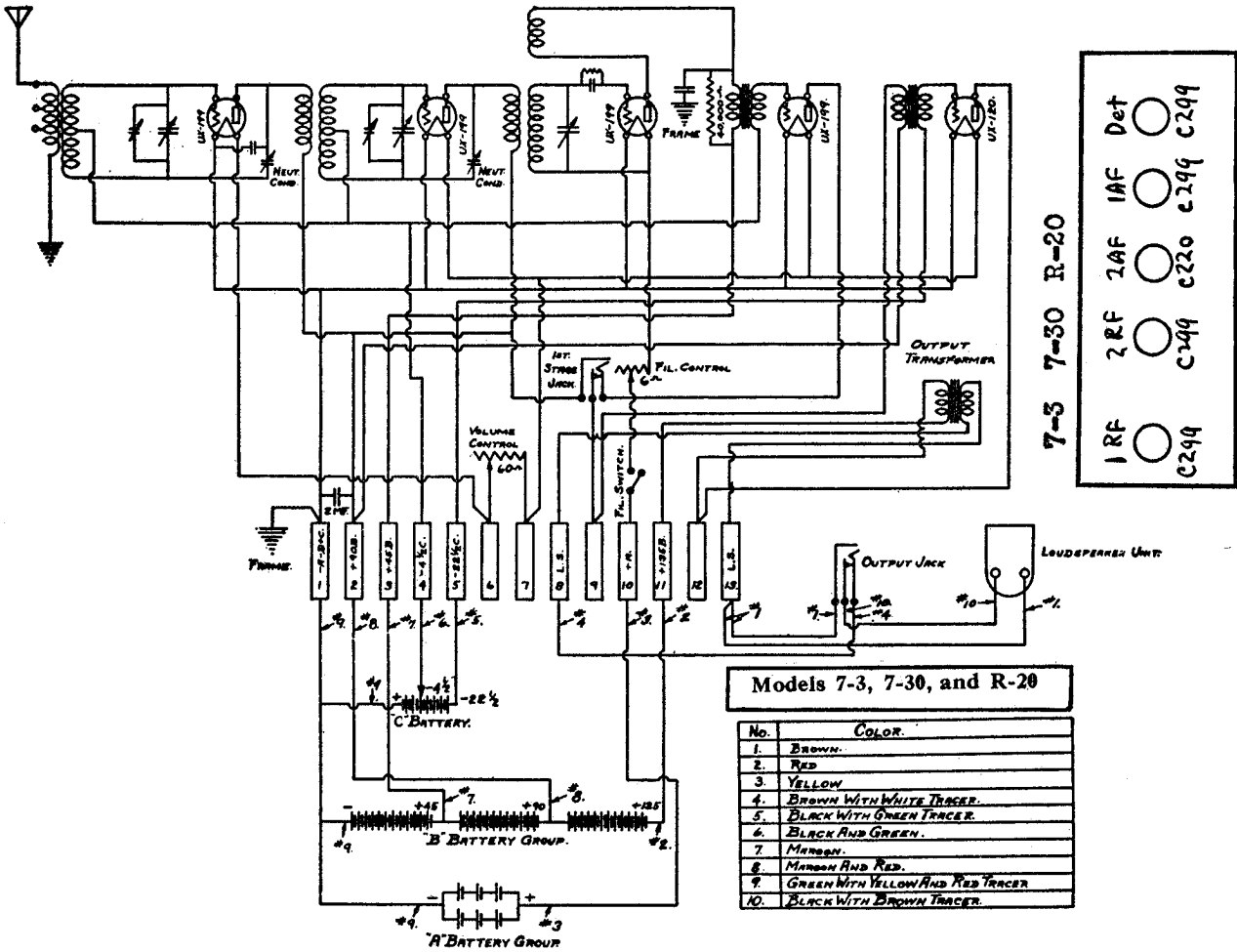


ELECTRO DYNAMIC SPEAKER	
1	RED
2	BROWN
3	BLACK
4	WHITE
5	YELLOW
6	RED YELLOW TRACER
7	RED GREEN TRACER

Cable Wiring Electrola E-35

MODEL Victor 7-3, 7-30, R-20
 MODEL Victor 7-26

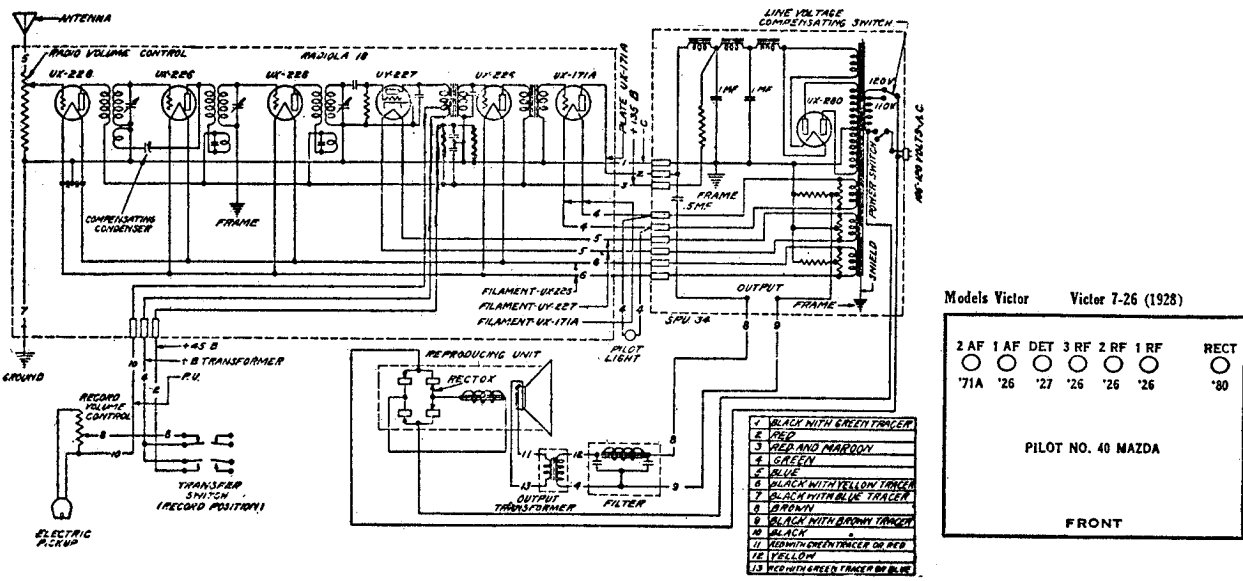
R. C. A. VICTOR CO., INC.



Models 7-3, 7-30, and R-20

No.	COLOR.
1.	BROWN.
2.	RED.
3.	YELLOW.
4.	BROWN WITH WHITE TRACER.
5.	BLACK WITH GREEN TRACER.
6.	BLACK AND GREEN.
7.	MARSH.
8.	MARSH AND RED.
9.	GREEN WITH YELLOW AND RED TRACER.
10.	BLACK WITH BROWN TRACER.

For 7-26 voltage data, see index.



Models Victor Victor 7-26 (1928)

2 AF	1 AF	DET	3 RF	2 RF	1 RF	RECT
○	○	○	○	○	○	○
'71A	'26	'27	'26	'26	'26	'80

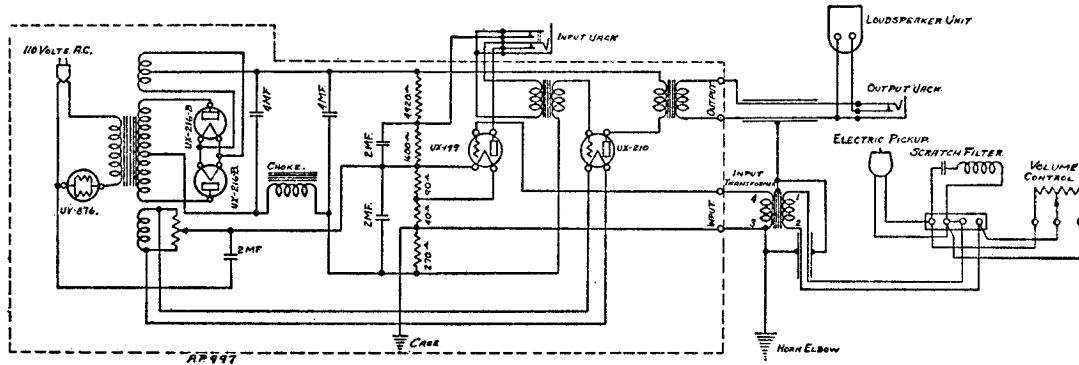
PILOT NO. 40 MAZDA

FRONT

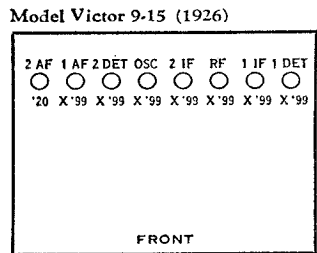
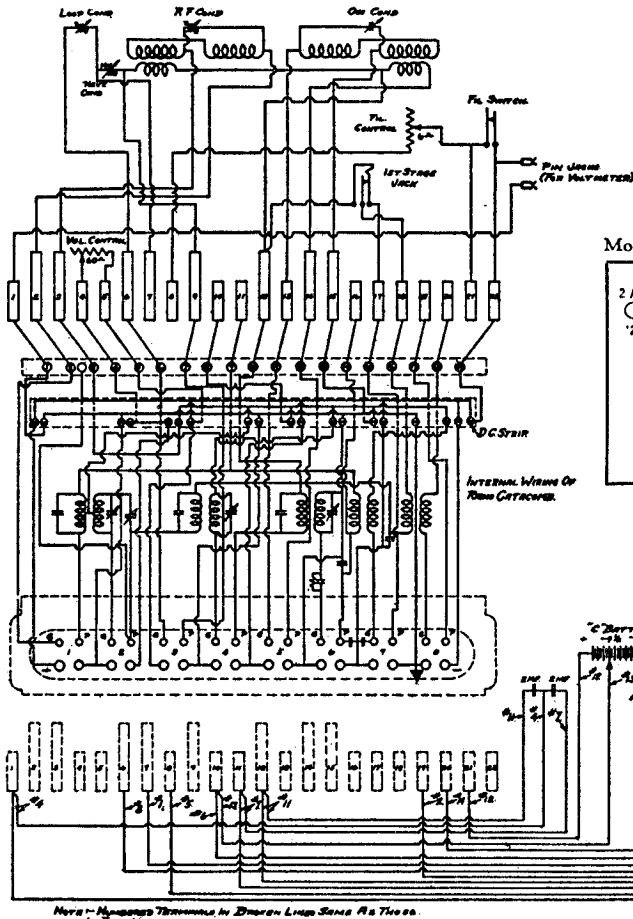
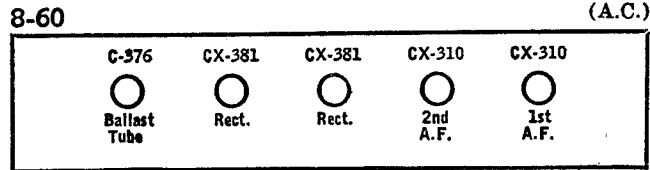
Schematic Wiring Diagram Electrola Radiola 7-26 Above Serial No. 12000

R. C. A. VICTOR CO., INC.

MODEL Victor 8-60
MODEL Victor 9-15



Wiring Diagram for Electrola 8-60



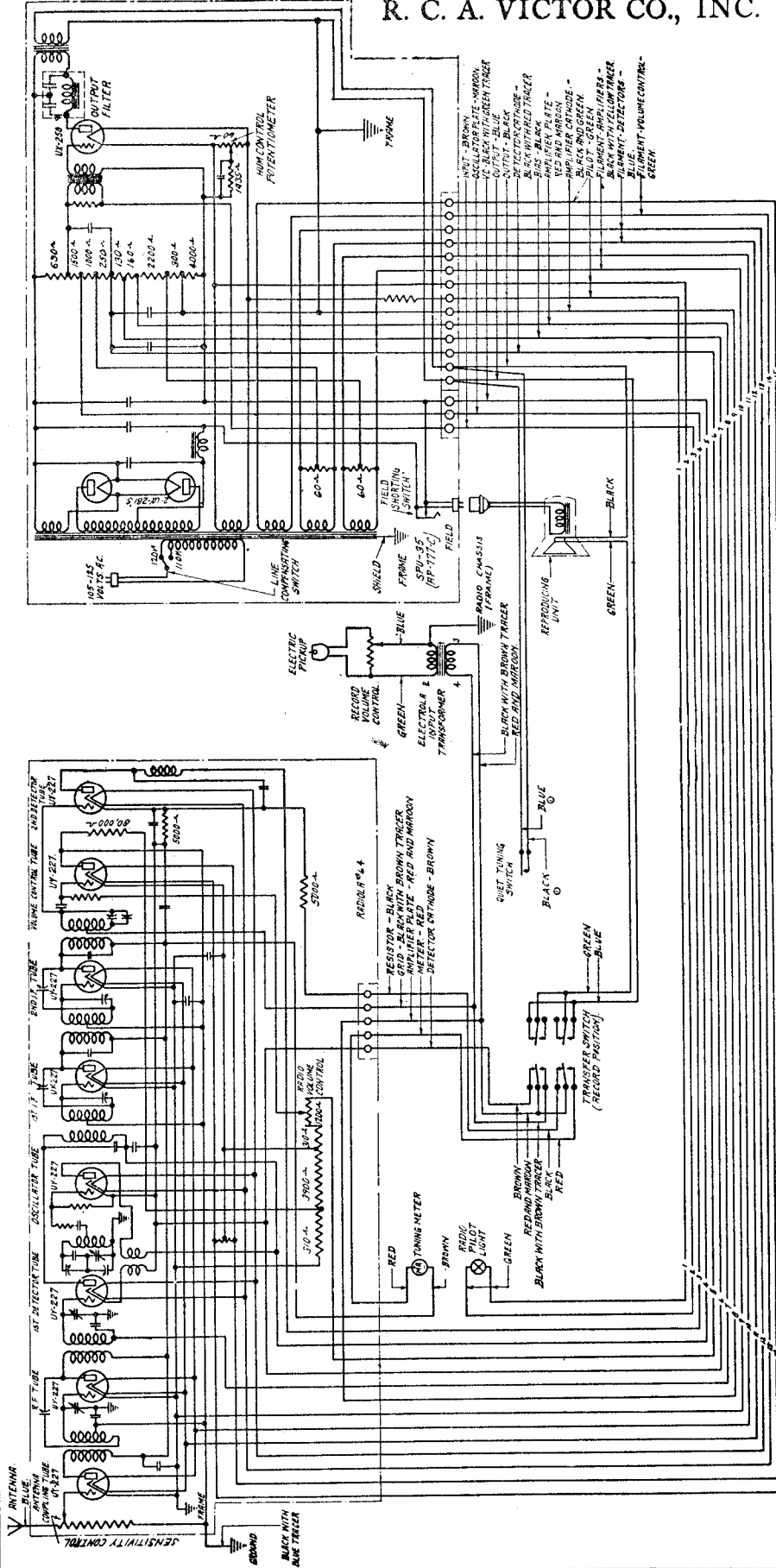
No.	Color
1	Black
2	Green
3	Red
4	Yellow with Red Traces
5	Black with Yellow Traces
6	Blue
7	White
8	Black with Blue Traces
9	Black with Green Traces
10	Black with White Traces
11	Maroon and Red
12	Green
13	Green and Black
14	Black with Green Traces

Note - Mounted Terminals in Diagram Show Same As Those in Full Layout.

Wiring Diagram for 9-15

MODEL Victor 9-18

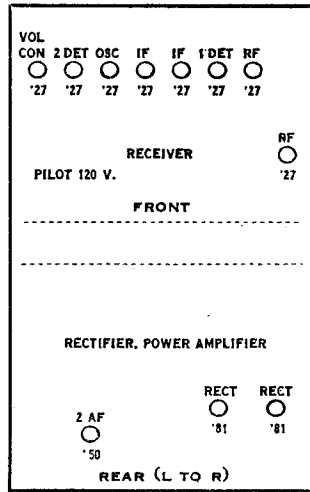
R. C. A. VICTOR CO., INC.



Schematic Wiring Diagram Electrola Radiola Model 9-18
VICTOR—Model 9-18
 Line Voltage 116—120 Volt Tap—Volume Control Full

TUBE ORDER	TYPE OF TUBE	PORTION OF TUBE	TUBE IN TESTER						PLATE M.A.	GRID M.A.	SCREEN M.A.
			A VOLTS	B VOLTS	C VOLTS	OUTSIDE VOLTS	NORMAL PLATE VOLTS	PLATE VOLTS			
1	227	Ant. Comp. St.	2.5	128	2.4	124	25	13.5	3.4	7.8	4.5
2	227	Tuned Ist. Det.	2.5	128	2.4	124	25	16.0	3.3	7.8	5.8
3	227	Tuned 2nd. Det.	2.5	80	2.4	75	25	16.0	2	7.8	2.7
4	227	Ist. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5
5	227	2nd. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5
6	227	Oscillator	2.5	80	2.4	75	25	13.5	7.0	7.8	6
7	227	2nd. Det.	2.5	130	2.4	176	25	15.5	—	—	—
8	227	Volume Cont.	2.5	80	2.4	75	4	—	—	—	—
9	250	Power	7.5	554	7.4	392	65	—	52	50	3.0
10	281	Rectifier	—	—	—	—	—	—	—	—	—
11	281	Rectifier	—	—	—	—	—	—	—	—	—

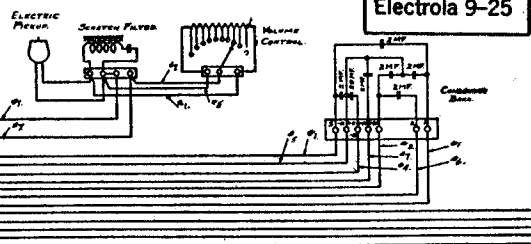
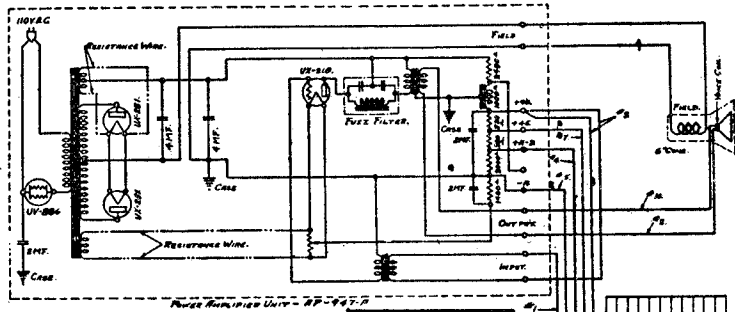
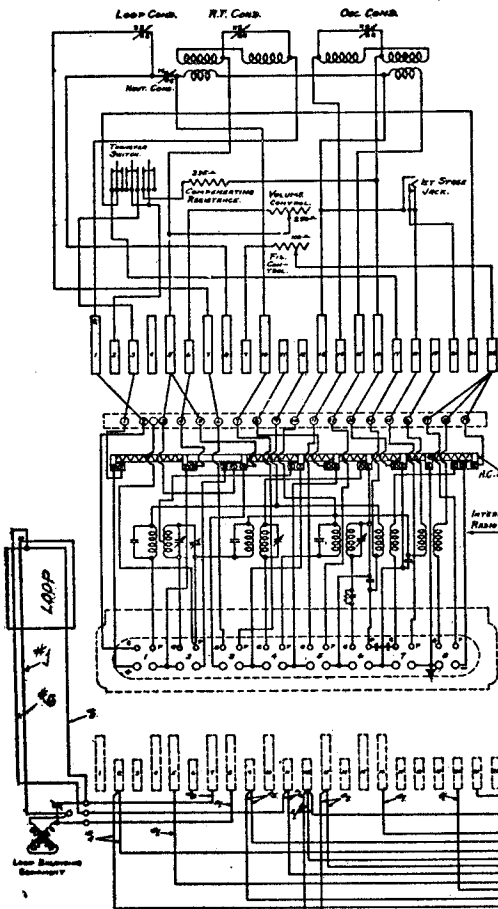
Models Victors 9-18,



R. C. A. VICTOR CO., INC.

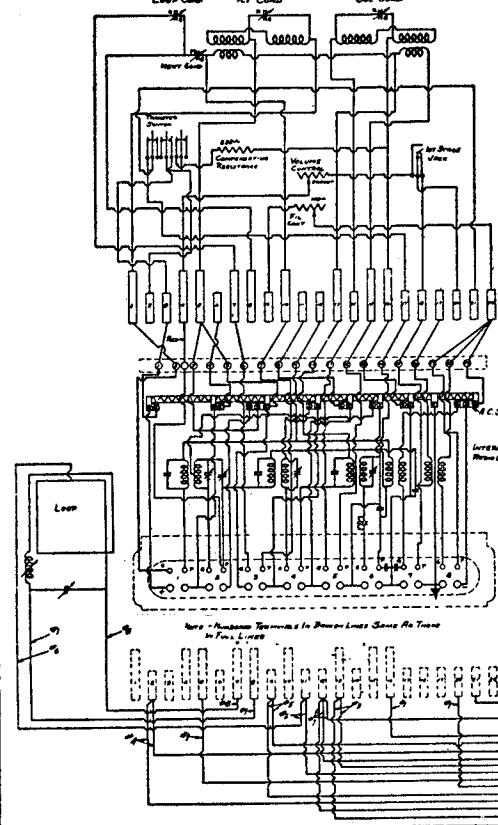
MODEL Victor 9-25
MODEL Victor 9-40

For Socket Layout see below



1	100K
2	50K
3	25K
4	10K
5	5K
6	2.5K
7	1K
8	500
9	250
10	100
11	50
12	25
13	10
14	5
15	2.5
16	1
17	500
18	250
19	100
20	50
21	25
22	10
23	5
24	2.5
25	1
26	500
27	250
28	100
29	50
30	25
31	10
32	5
33	2.5
34	1
35	500
36	250
37	100
38	50
39	25
40	10
41	5
42	2.5
43	1
44	500
45	250
46	100
47	50
48	25
49	10
50	5
51	2.5
52	1
53	500
54	250
55	100
56	50
57	25
58	10
59	5
60	2.5
61	1
62	500
63	250
64	100
65	50
66	25
67	10
68	5
69	2.5
70	1
71	500
72	250
73	100
74	50
75	25
76	10
77	5
78	2.5
79	1
80	500
81	250
82	100
83	50
84	25
85	10
86	5
87	2.5
88	1
89	500
90	250
91	100
92	50
93	25
94	10
95	5
96	2.5
97	1
98	500
99	250
100	100

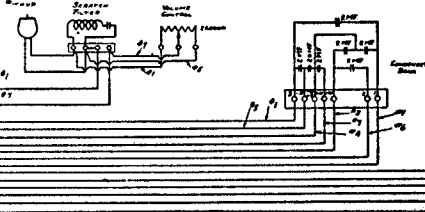
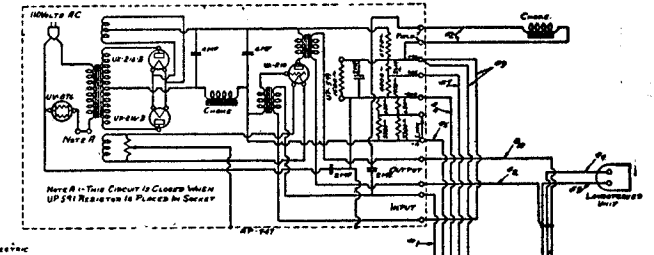
Note - Numbers Through in Broken Lines Same As Those in Full Lines.



Models Victors 9-25, 9-40.

1 AF	2 DET	OSC	2 IF	RF	1 IF	1 DET
NO	X '99	X '99	X '99	X '99	X '99	X '99
TUBE						
RECEIVER						
PILOT 115 V. CANDELABRA BASE						
FRONT						
RECTIFIER, POWER AMPLIFIER						
2 AF	RECT	RECT	VOLT REG	BALLAST TUBE		
'10	'81	'81	UP591	886		
REAR (L TO R)						

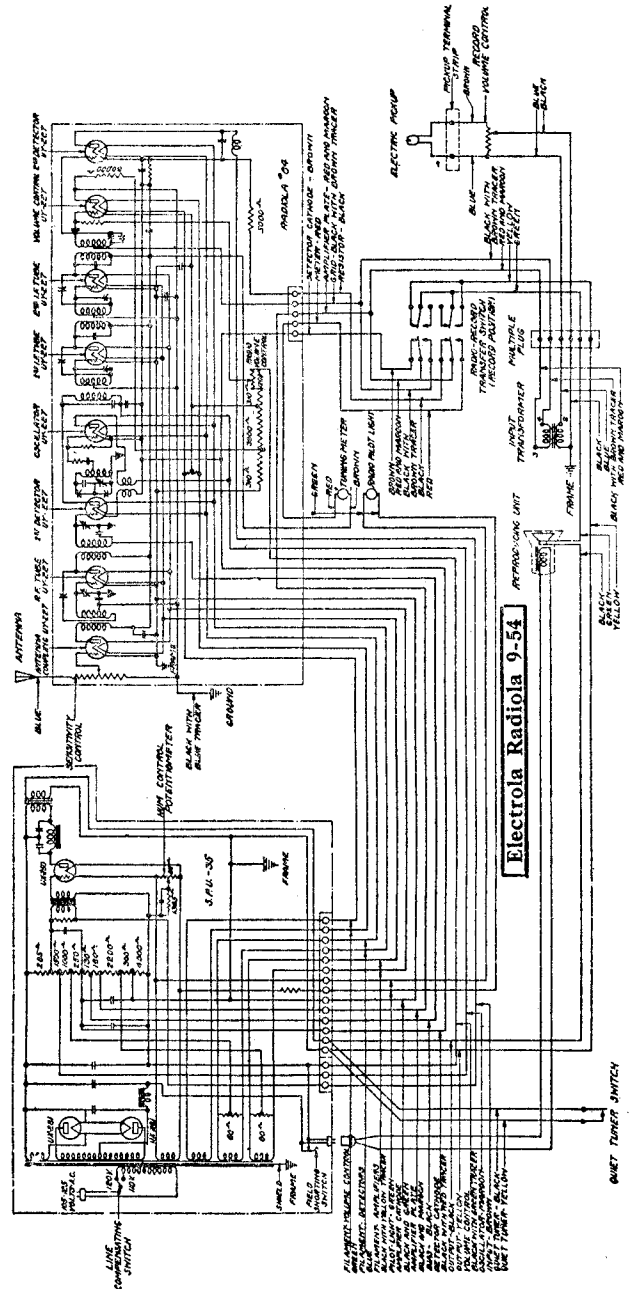
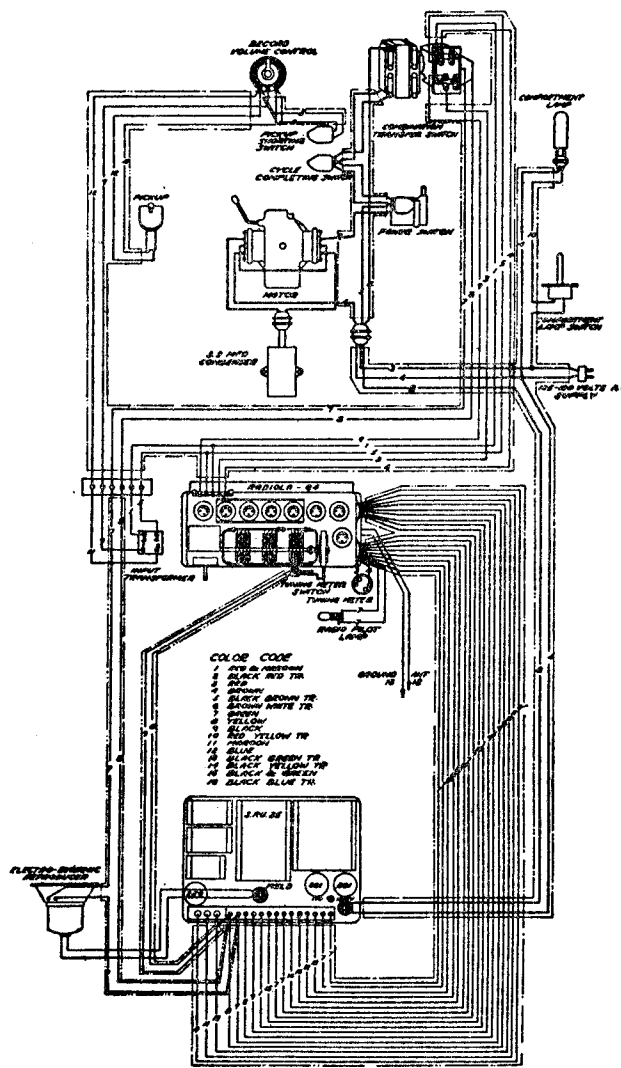
Electrola 9-40



1	100K
2	50K
3	25K
4	10K
5	5K
6	2.5K
7	1K
8	500
9	250
10	100
11	50
12	25
13	10
14	5
15	2.5
16	1
17	500
18	250
19	100
20	50
21	25
22	10
23	5
24	2.5
25	1
26	500
27	250
28	100
29	50
30	25
31	10
32	5
33	2.5
34	1
35	500
36	250
37	100
38	50
39	25
40	10
41	5
42	2.5
43	1
44	500
45	250
46	100
47	50
48	25
49	10
50	5
51	2.5
52	1
53	500
54	250
55	100
56	50
57	25
58	10
59	5
60	2.5
61	1
62	500
63	250
64	100
65	50
66	25
67	10
68	5
69	2.5
70	1
71	500
72	250
73	100
74	50
75	25
76	10
77	5
78	2.5
79	1
80	500
81	250
82	100
83	50
84	25
85	10
86	5
87	2.5
88	1
89	500
90	250
91	100
92	50
93	25
94	10
95	5
96	2.5
97	1
98	500
99	250
100	100

MODEL Victor 9-54

R. C. A. VICTOR CO., INC.

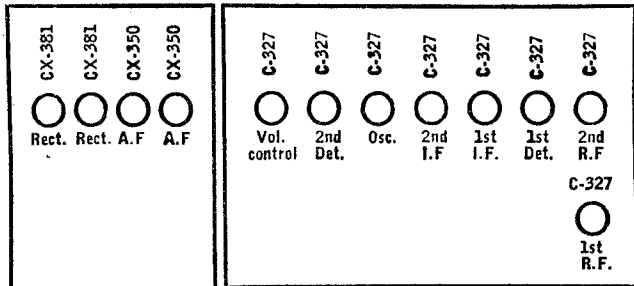


Cable Wiring Diagram Automatic Electrola Radiola 9-54 above Serial No. 6401

This receiver employs the Radiola 64 chassis. For special information relating to the receiver and power pack chassis, see Radiola 64.

9-54

(A.C.) VICTOR—Model 9-54
Line Voltage 116—120 Volt Tap—Volume Control Full



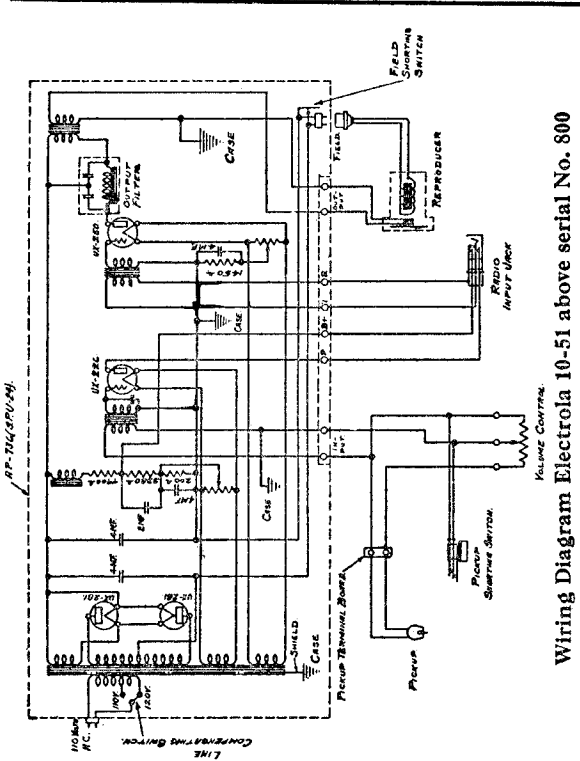
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. R.F. DET., ETC.	READINGS, PLUG IN SOCKET OF SET								
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. 50 TEST	PLATE M.A. CHANGE		
1	227	Ant. Coup. St.	2.5	128	2.4	124	25	13.5	3.4	7.8	4.4
2	227	Tuned R.F.	2.5	128	2.4	124	25	16.0	3.3	7.1	3.8
3	227	Tuned 1st Det.	2.5	80	2.4	75	25	16.0	2	2.9	2.7
4	227	1st. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5
5	227	2nd. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5
6	227	Oscillator	2.5	80	2.4	75	25	13.5	7.0	7.6	6
7	227	2nd. Det.	2.5	180	2.4	176	25	13.5	5	5	5
8	227	Volume Cont.	2.5	80	2.4	75	4	4	5	5	5
9	250	Power	7.5	584	7.2	392	65	52	55	3.0	
10	281	Rectifier			7.4			50			
11	281	Rectifier			7.4			50			

R. C. A. VICTOR CO., INC.

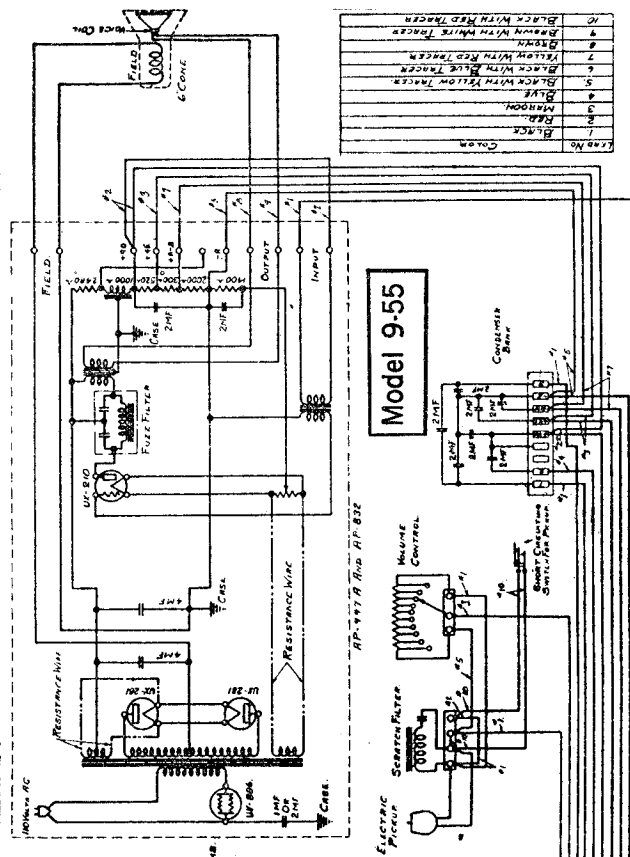
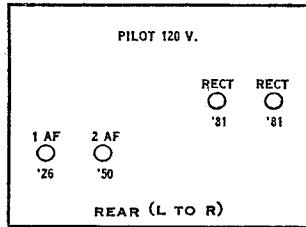
MODEL Victor 10-51A
MODEL Victor 9-55

Electrola 9-55 Receiver

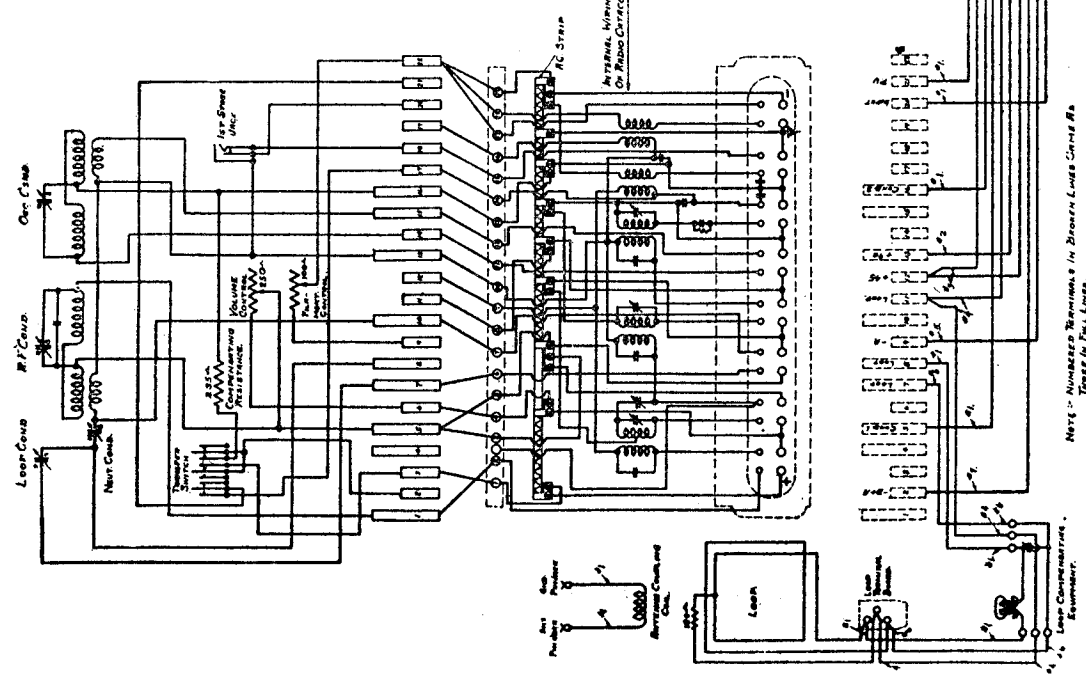
- CX-299
○
1st Det.
- CX-299
○
1st I.F.
- CX-299
○
1st R.F.
- CX-299
○
2nd I.F.
- CX-299
○
Osc.
- CX-299
○
2nd Det.
- CX-299
○
1st A.F.



Models Victor 10-51A, (1928)

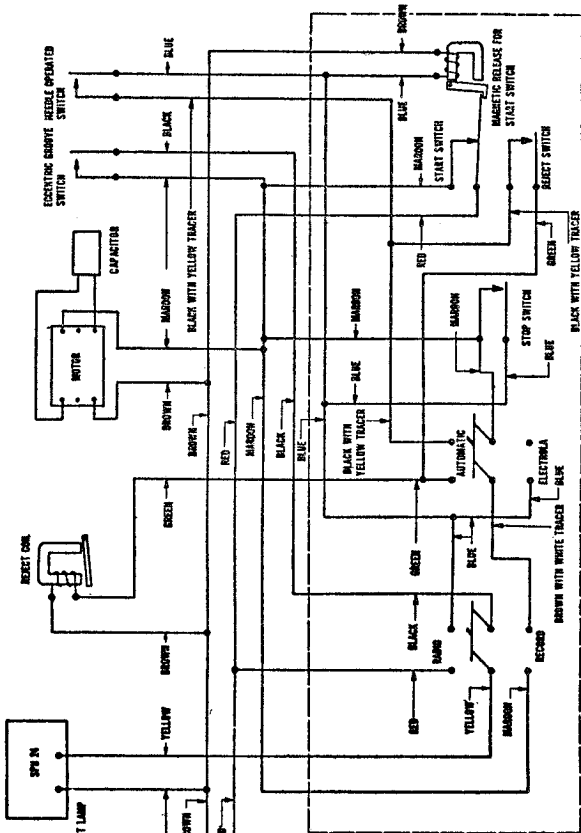


- Electrola 9-55 Power Unit
- BALLAST ○ C-386
 - VOL.T. REF. ○ CX-381
 - RECT. ○ CX-381
 - 2 A.F. ○ CX-310



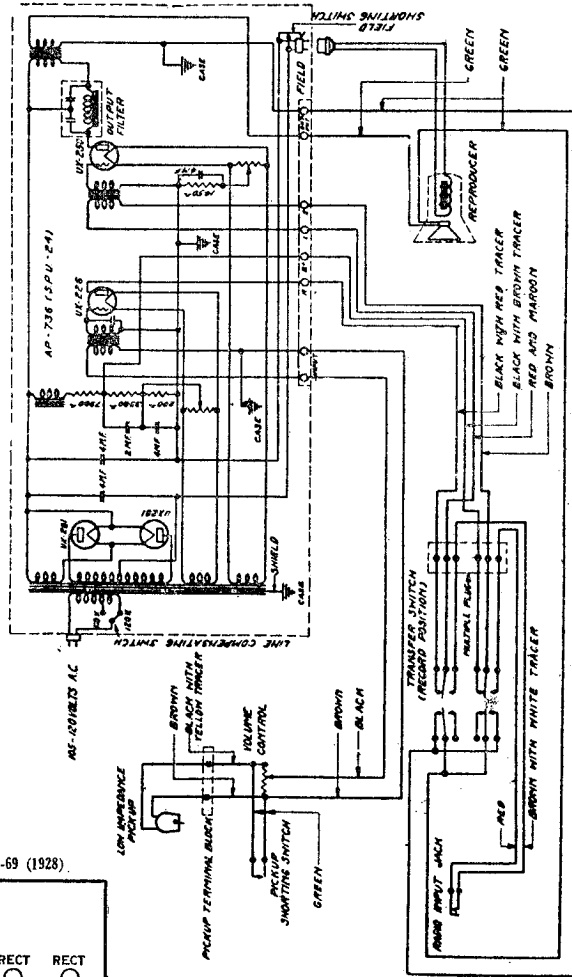
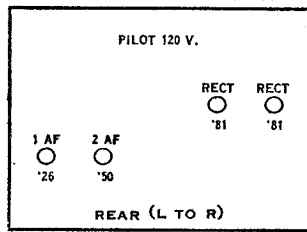
MODEL Victor 10-69

R. C. A. VICTOR CO., INC.

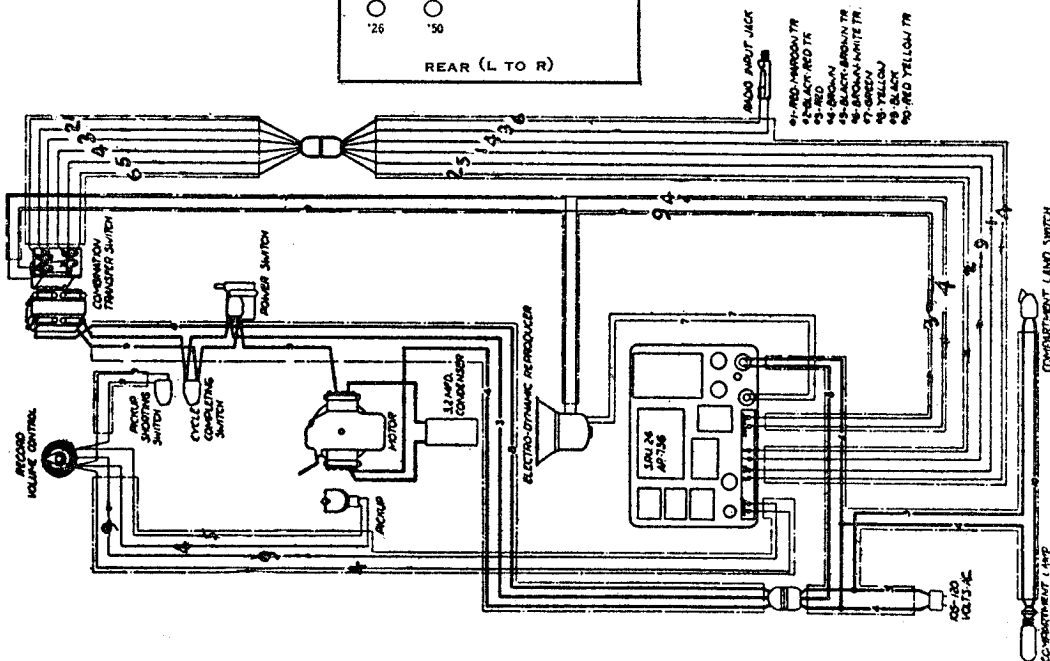


A. C. Power Wiring Diagram Automatic Electrota No. 10-69

Models Victor 10-51A, Victor 10-69 (1928)



Schematic Wiring Diagram Automatic Electrota No. 10-69

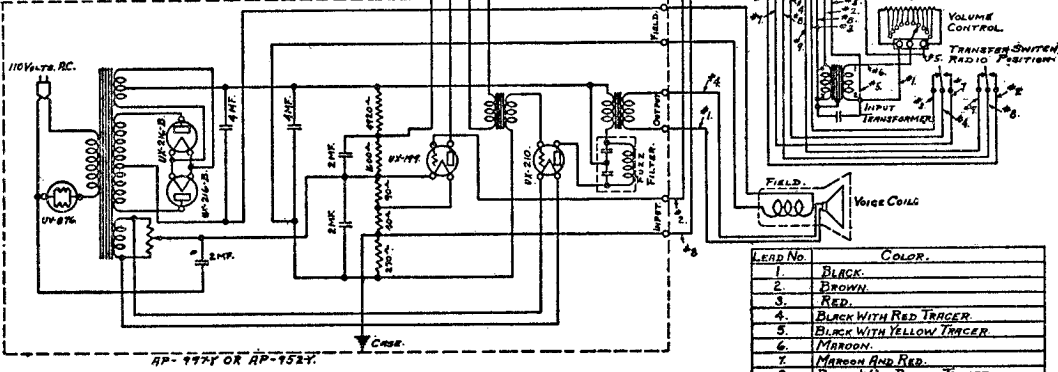
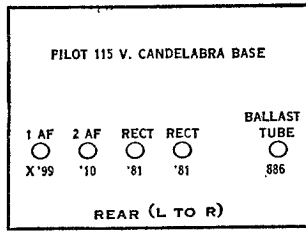


Cable Wiring Diagram Automatic Electrota 10-69, above Serial No. 5001

R. C. A. VICTOR CO., INC.

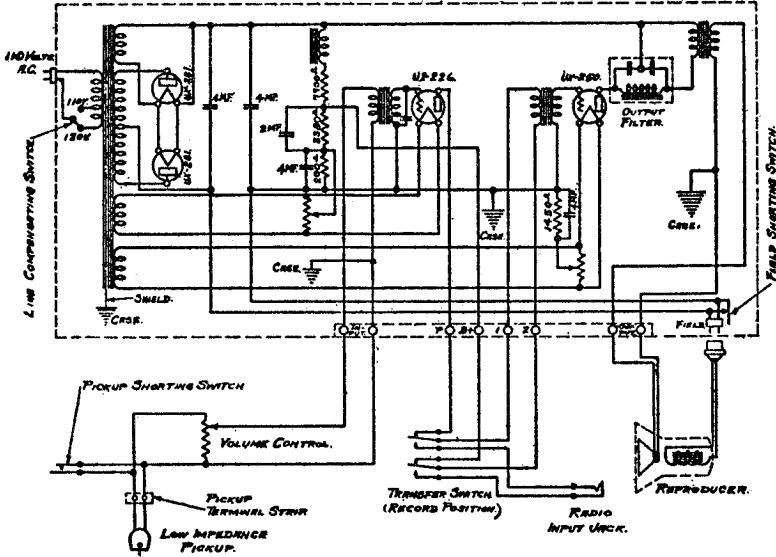
MODEL Victor 10-70
 MODEL Victor 10-70-A
 MODEL Victor 12-25

Models Victors 10-51, 10-70, 12-15. (1927)

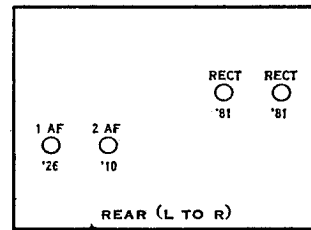


LEAD No.	COLOR.
1.	BLACK.
2.	BROWN.
3.	RED.
4.	BLACK WITH RED TRACER.
5.	BLACK WITH YELLOW TRACER.
6.	MAROON.
7.	MAROON AND RED.
8.	BLACK WITH BROWN TRACER.
9.	BROWN WITH WHITE TRACER.

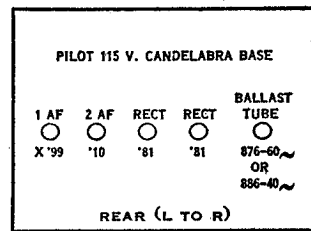
Wiring Diagram—Electrola 10-70



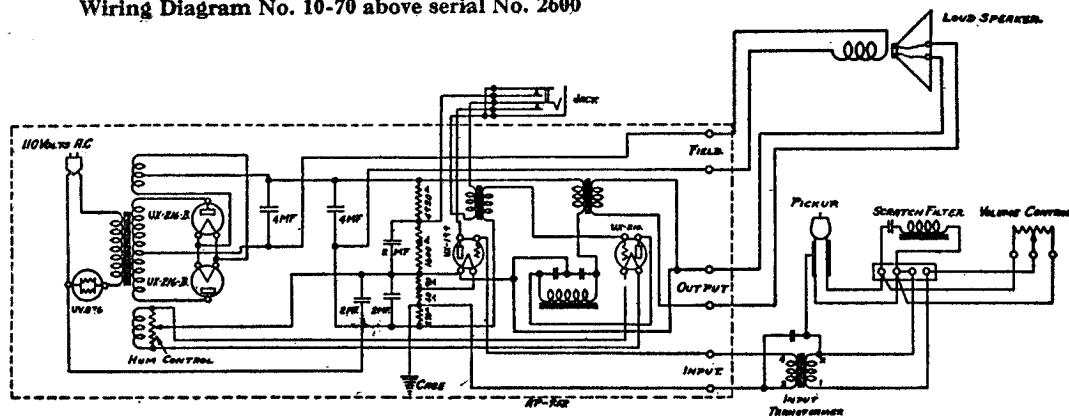
Models Victors 10-70A, (1928)



Models Victors 12-25 (1926)



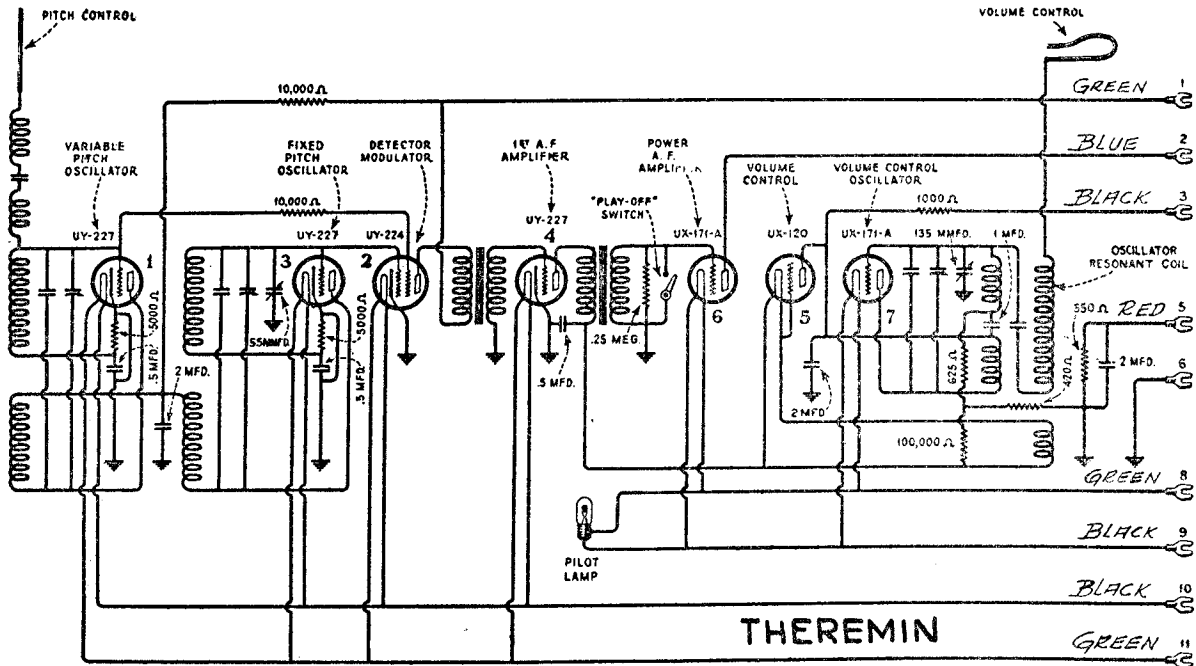
Wiring Diagram No. 10-70 above serial No. 2600



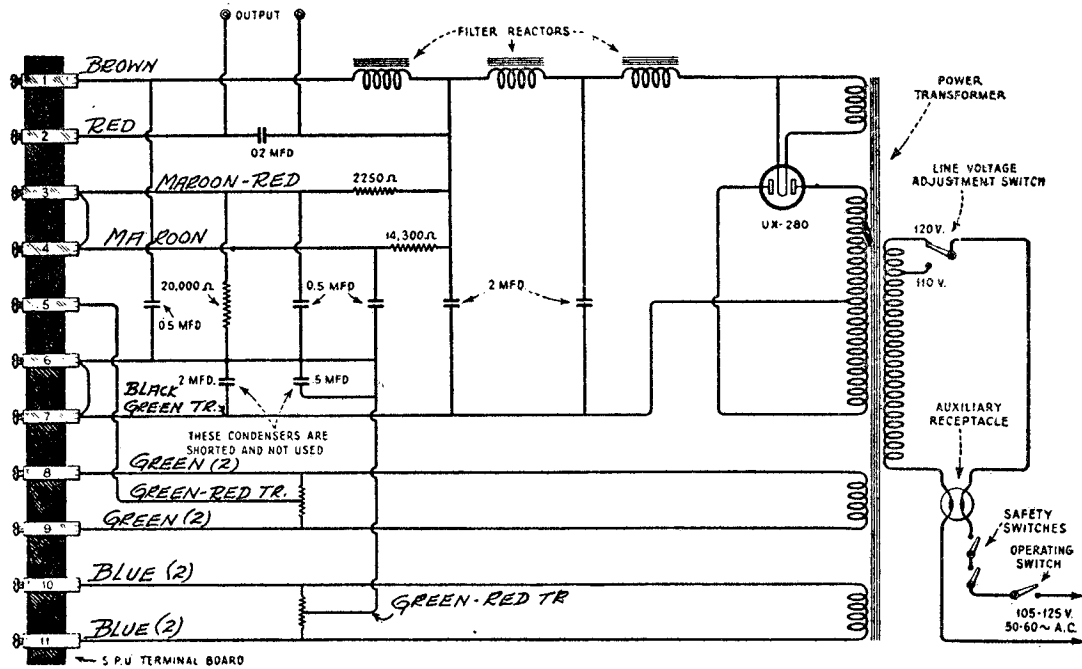
Electrola 12-25

MODEL Therman

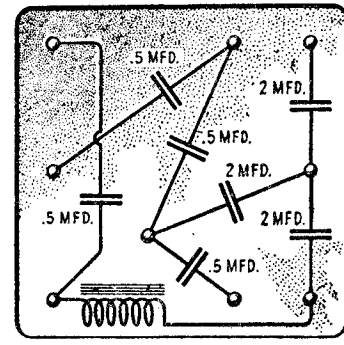
R. C. A. VICTOR CO., INC.



THEREMIN



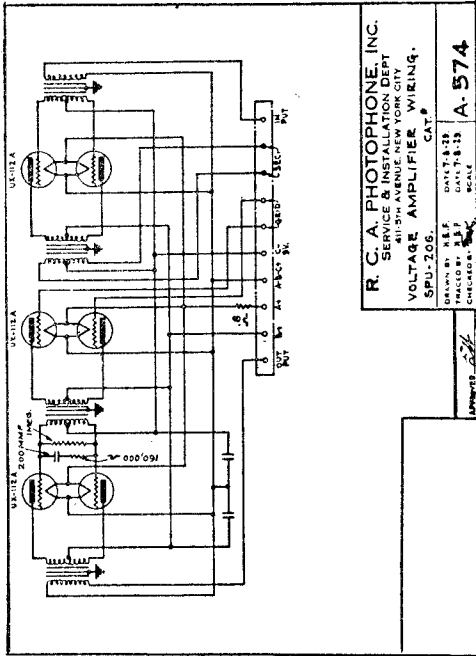
Terminals Nos.	Cable on Tubes Lighted Volts	Cable Off Volts
1 to 6 (D.C.)	190	260
2 to 6	190	260
3 to 6	140	230
5 to 6	29.0	0
8 to 9 (A.C.) rms	2.5	2.8
10 to 11 (A.C.) rms	4.7	5.0



-Internal connections of filter and by-pass condensers, and filter reactor

MODEL Photophone SPU 62
 Schematic- Chassis
 MODEL Photophone SPU 63
 MODEL Photophone SPU 206

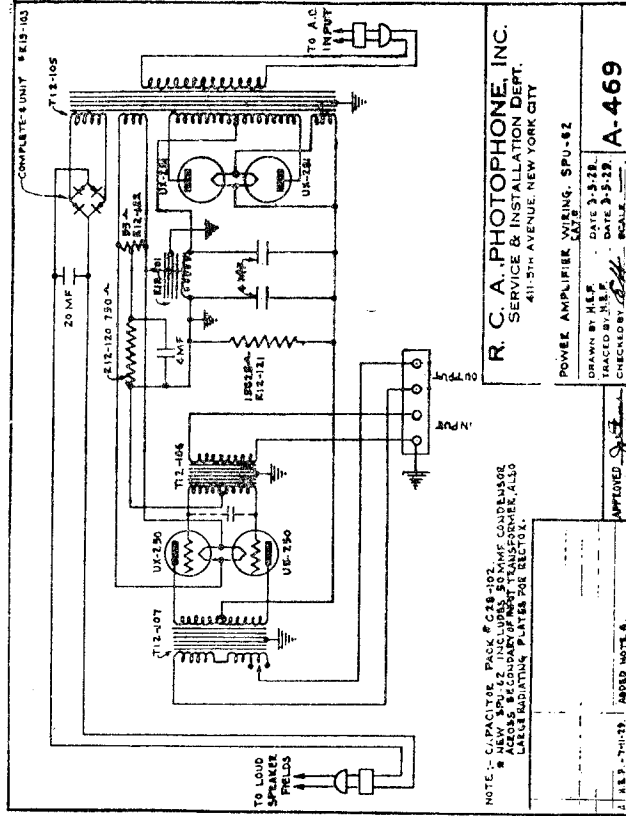
R. C. A. VICTOR CO., INC.



R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411-5TH AVENUE, NEW YORK CITY

VOLTAGE AMPLIFIER WIRING.
 SPU-206. CAT. #

DRAWN BY H.E.P. DATE 3-5-29
 CHECKED BY J.E.P. DATE 3-5-29
 APPROVED BY J.E.P. SCALE: A-574

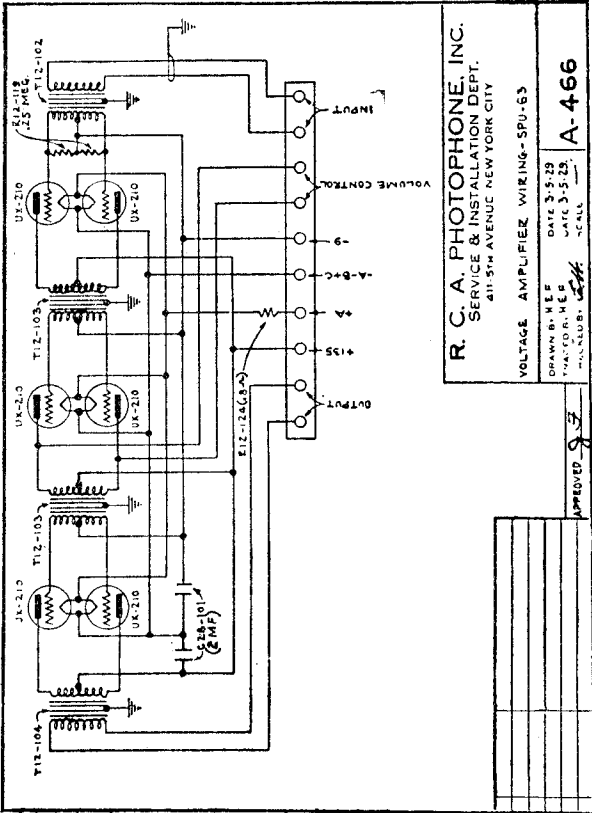


R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411-5TH AVENUE, NEW YORK CITY

POWER AMPLIFIER WIRING. SPU-62

NOTE: 6X4 TUBE PACK FOR SPU 62 IS NEW TYPE OF 6X4 TUBE. CONDENSER ACROSS SECONDARY OF POWER TRANSFORMER, ALSO LABEL INDICATING PLATES FOR RECT. L.

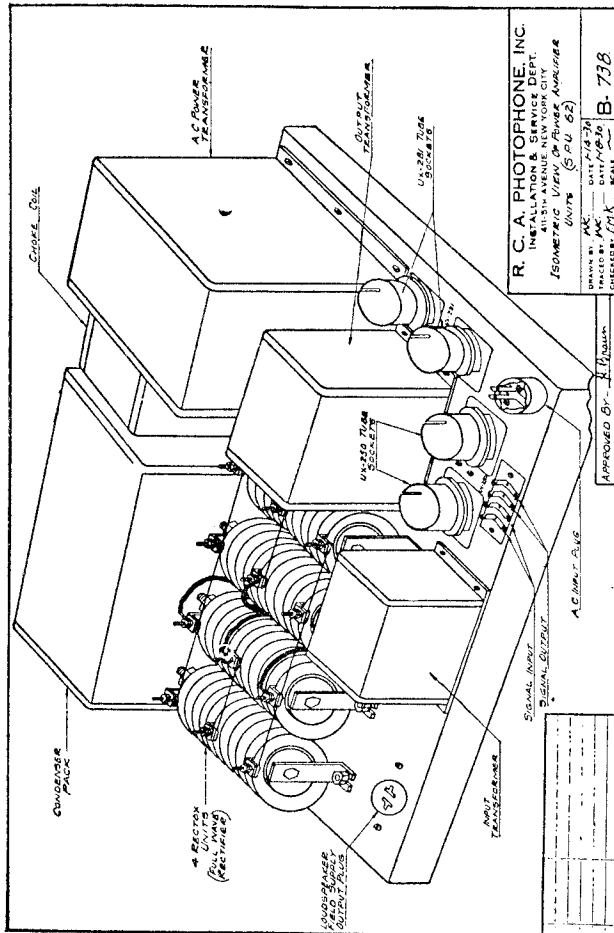
DRAWN BY H.E.P. DATE 3-5-29
 CHECKED BY J.E.P. DATE 3-5-29
 APPROVED BY J.E.P. SCALE: A-469



R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411-5TH AVENUE, NEW YORK CITY

VOLTAGE AMPLIFIER WIRING-SPU-63

DRAWN BY H.E.P. DATE 3-5-29
 CHECKED BY J.E.P. DATE 3-5-29
 APPROVED BY J.E.P. SCALE: A-466



R. C. A. PHOTOPHONE, INC.
 INSTALLATION & SERVICE DEPT.
 150 METROPOLITAN AVENUE, NEW YORK CITY

UNITS (SPU 62)

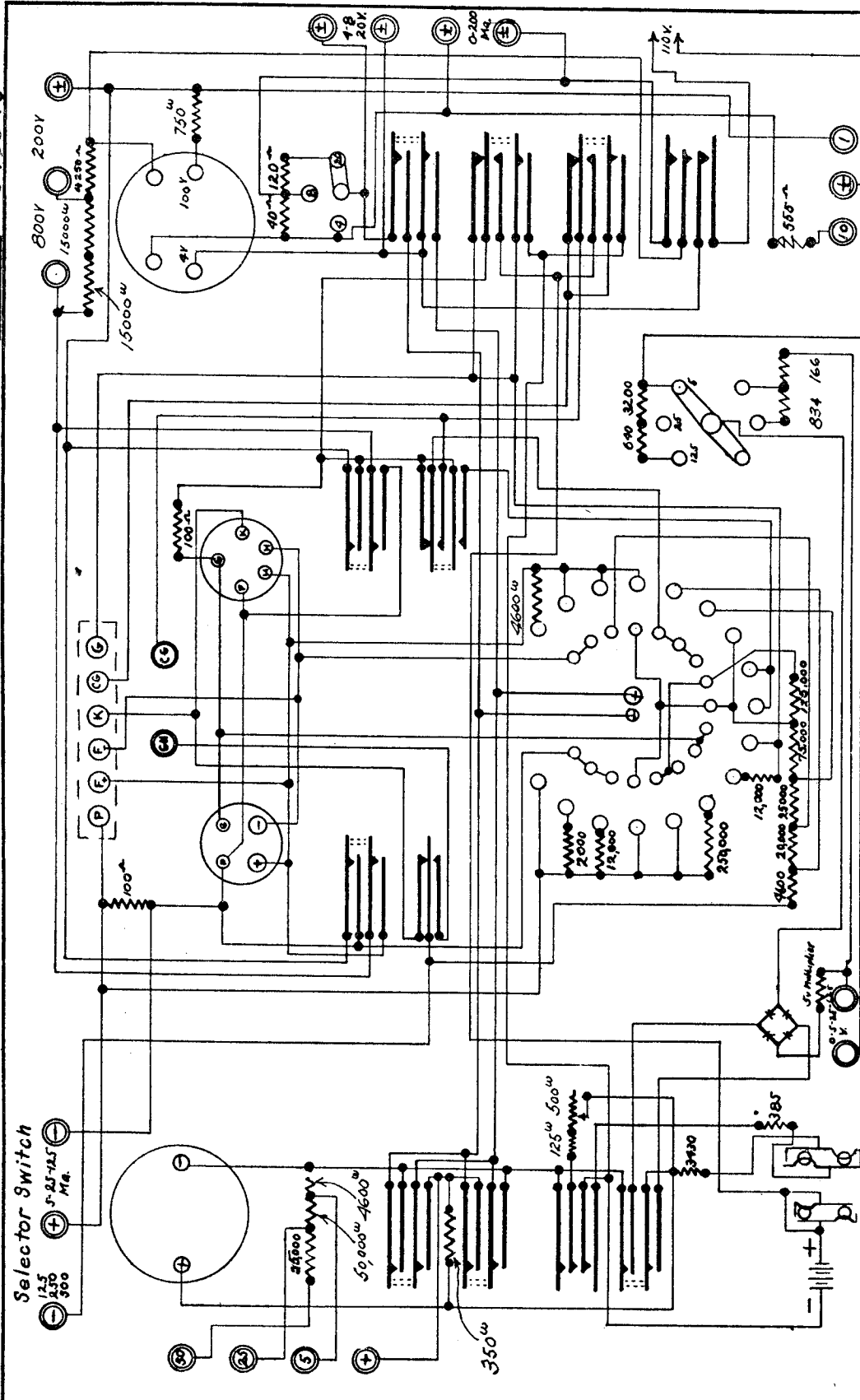
DRAWN BY H.E.P. DATE 3-5-29
 CHECKED BY J.E.P. DATE 3-5-29
 APPROVED BY J.E.P. SCALE: B-738

RADIO PRODUCTS CO.

MODEL Dayrad 8-80

C-2043

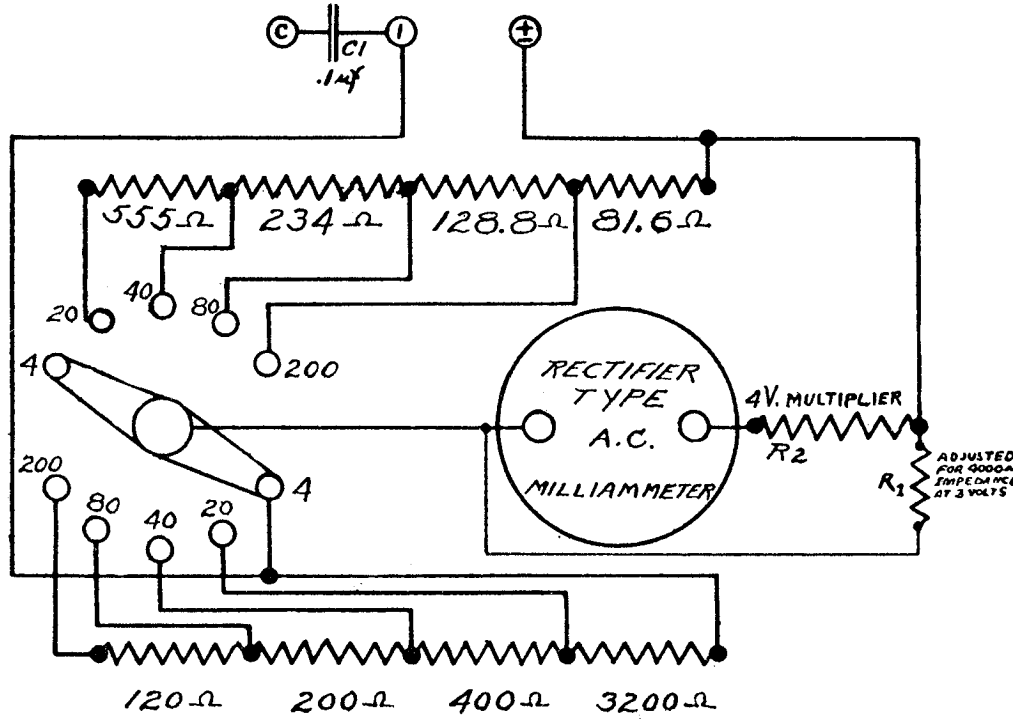
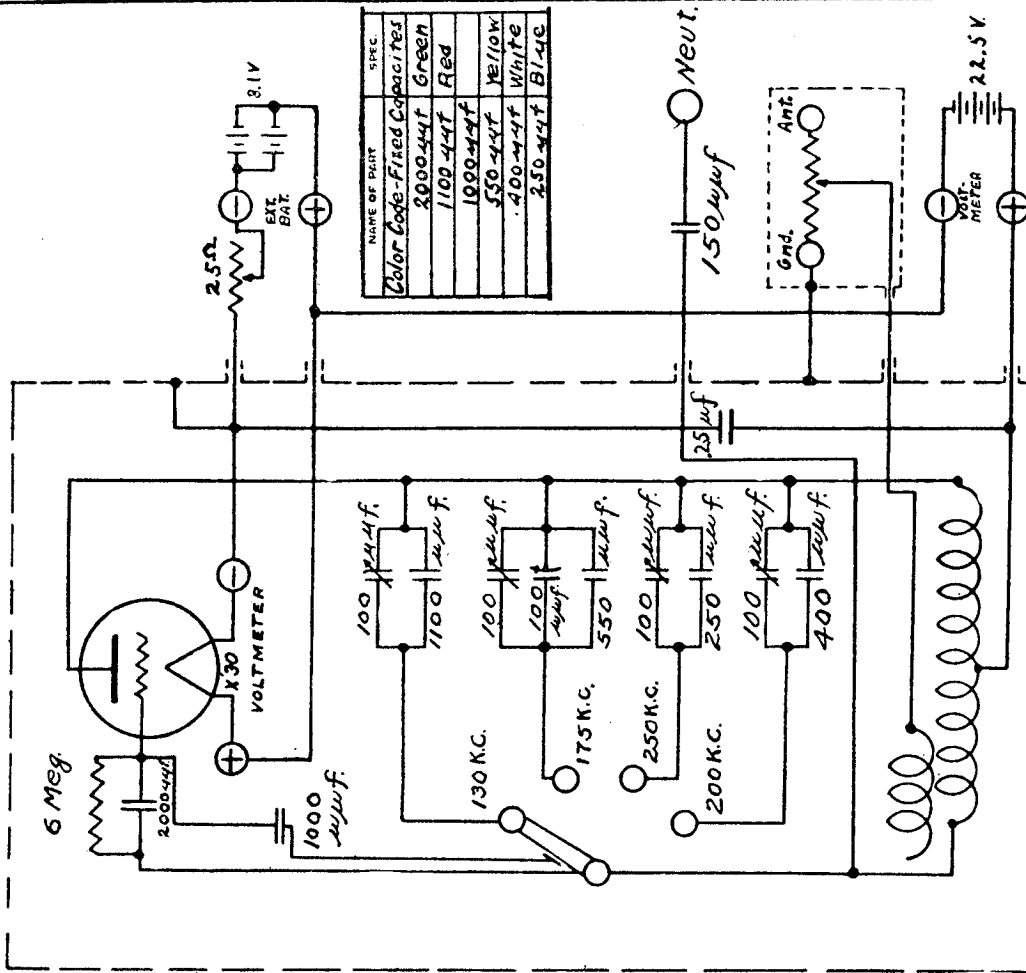
Date of Issue



PART NO.	NAME OF PART	SPEC.	PART NO.	NAME OF PART	SPEC.	CHANGES	DATE
						TITLE	Circuit Diagram
						NAME OF PART	Dayrad Analyzer
						FOR	
						DRAWN BY	DATE 1-5-31
						CHECKED BY	DATE
				ENGINEERING DEPARTMENT THE RADIO PRODUCTS CO. Dayton, Ohio Drawing No. C-2043 Date Jan 5, 1931			

MODEL Dayrad 21
Output Meter
MODEL 330 mmf
Oscillator

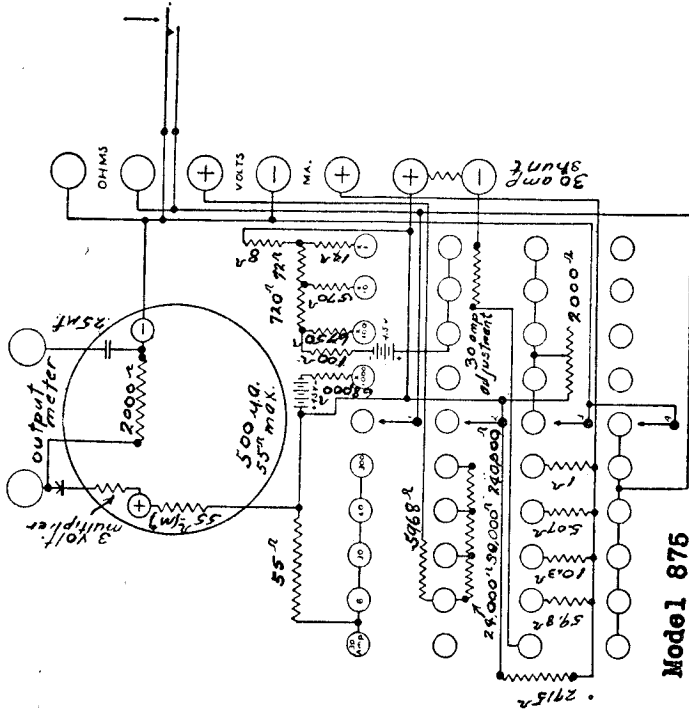
RADIO PRODUCTS CO.



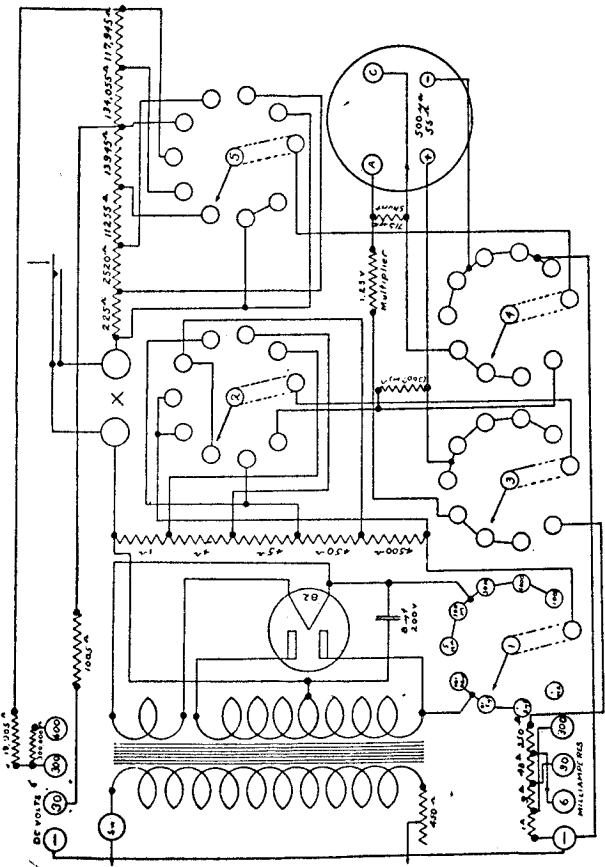
TITLE	Circuit Diagram
NAME OF PART	Output Meter
FILE NO.	21
DRAWN BY	RM DATE 12-2-30
CHECKED BY	
DATE	
ENGINEERING DEPARTMENT	THE RADIO PRODUCTS CO. Dayton, Ohio
DRAWING NO.	G-2047
DATE	April 10, 1931
CHARGES	From Serial No.
DATE	
TITLE	Circuit Diagram
NAME OF PART	Type 330 M.F. Oscillator
FOR	FOR PREVIOUS NOS. SEE C-2039
DRAWN BY	RM DATE 4-10-31
CHECKED BY	
DATE	

RADIO PRODUCTS CO.

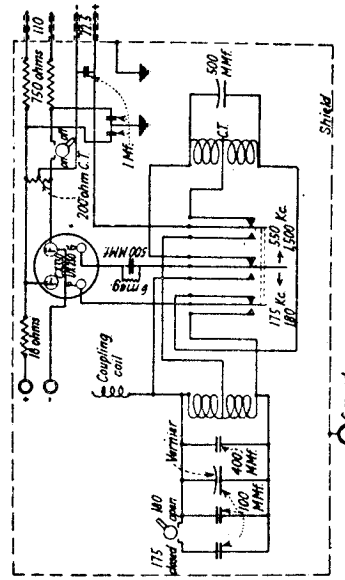
MODEL Dayrad 180
 MODEL Dayrad HR
 MODEL Dayrad 870
 MODEL Dayrad 875



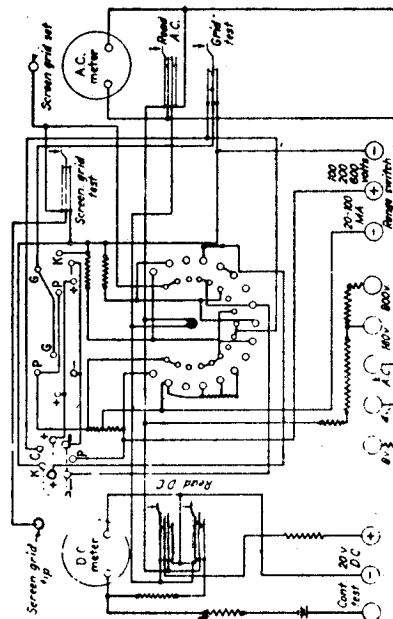
Model 875



Schematic diagram of the Dayrad Type 870 Test Meter, which operates from the 110-volt, 60-cycle line. All values are given



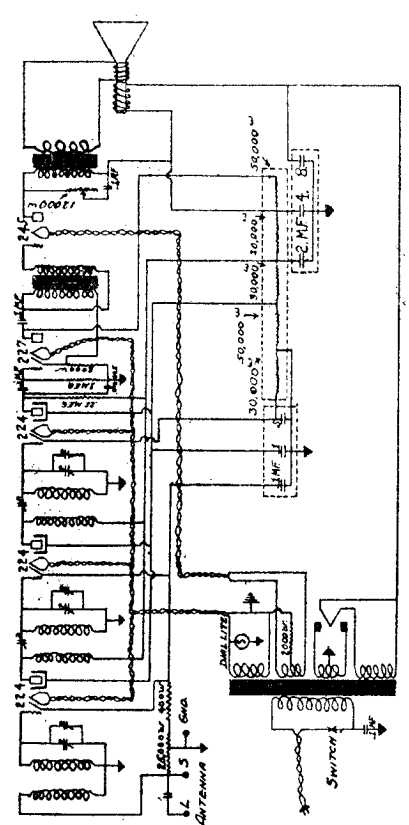
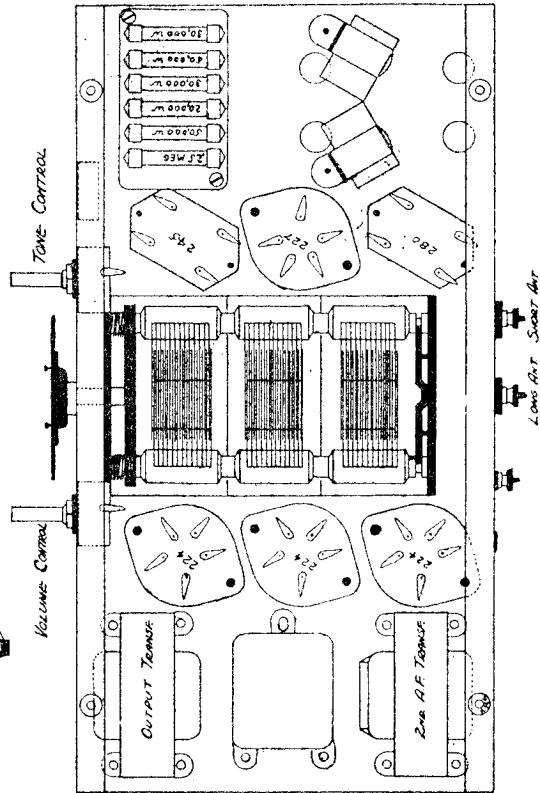
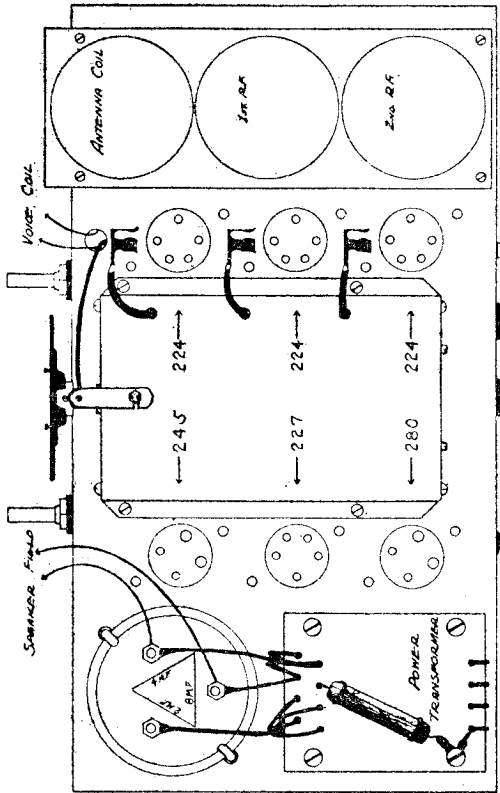
DayRad (Type 180)



Dayrad HR

REMLER COMPANY, LTD.

MODEL 14

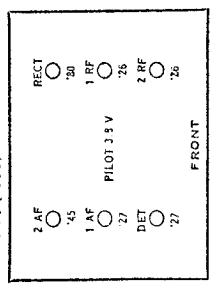


WIRE COLOR CODE
 RED - FILAMENT RECTIFIER - KATHODE AF - PLATE RF -
 PLATE POWER TUBE - SPEAKER FIELD
 BLUE - FILAMENT POWER TUBE - PLATE DETECTOR - 1B RF
 GREEN - KATHODE DETECTOR - GRID POWER TUBE
 BROWN - FILAMENT 1st AF TUBE - DETECTOR KATHODE -
 BLACK - FILAMENT 1st AF TUBE - DETECTOR KATHODE -
 SPEAKER VOICE COIL
 YELLOW - SHIELD GRID - PLATE 1st AF - PLATE RECTIFIER

VOLTAGE TABLE

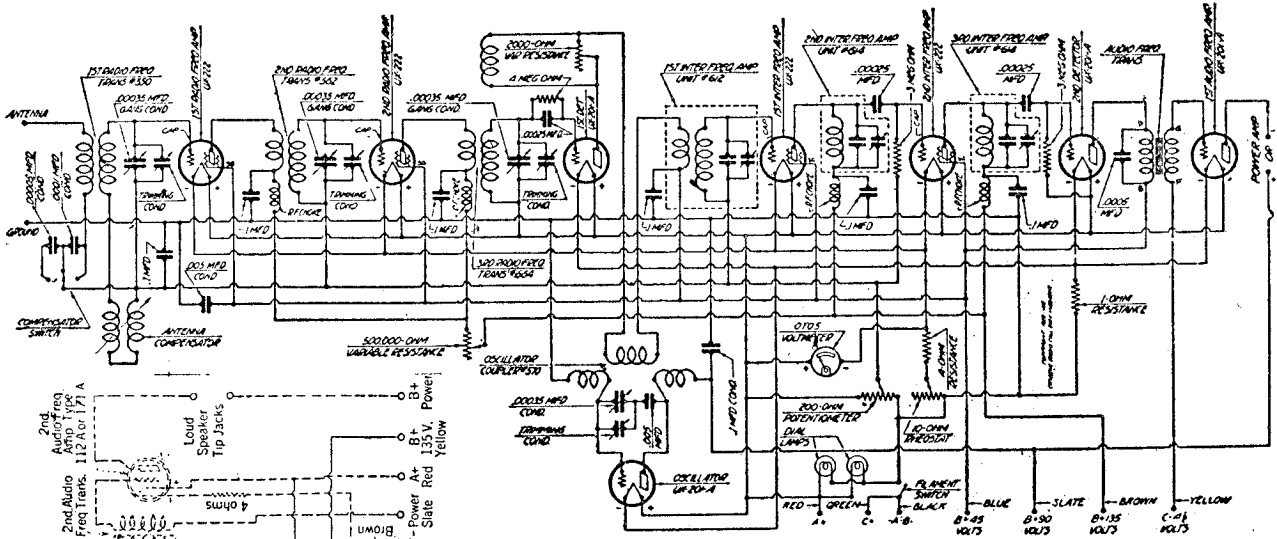
TUBE	POSITION	FIL V	GRID V	PLATE V	SOCKETS
224	1st AF	2.3	3-9	160-185	85-125
224	2nd AF	2.3	3-9	160-185	85-125
224	DET	2.3	4B-8	75-115	85-125
245	1st AF	2.3	7	110	
245	POWER	2.4	47	235	
280	RECTIFIER	4.9		400	

Model 14 (1930)

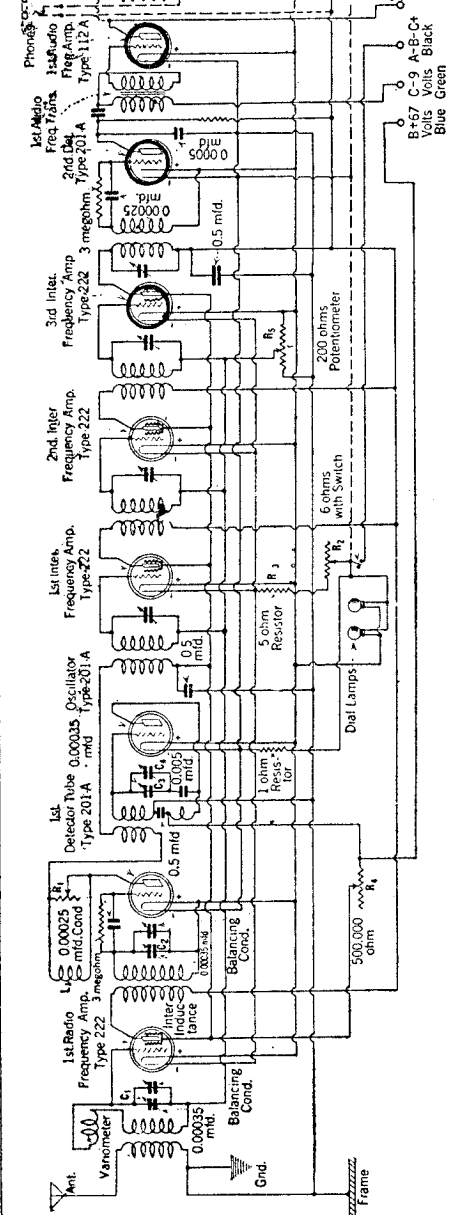


REMLER COMPANY, LTD.

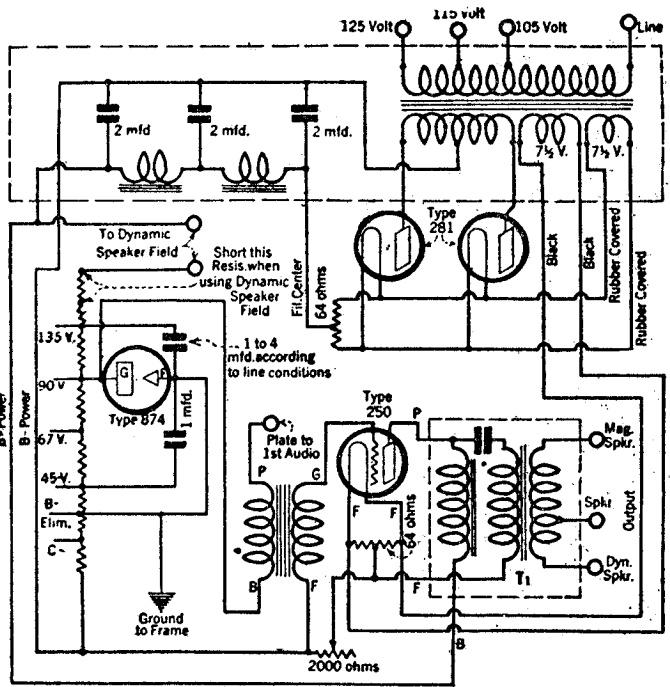
MODEL Best "115 KC"
MODEL Remler "29"



Model Best "115 KC"



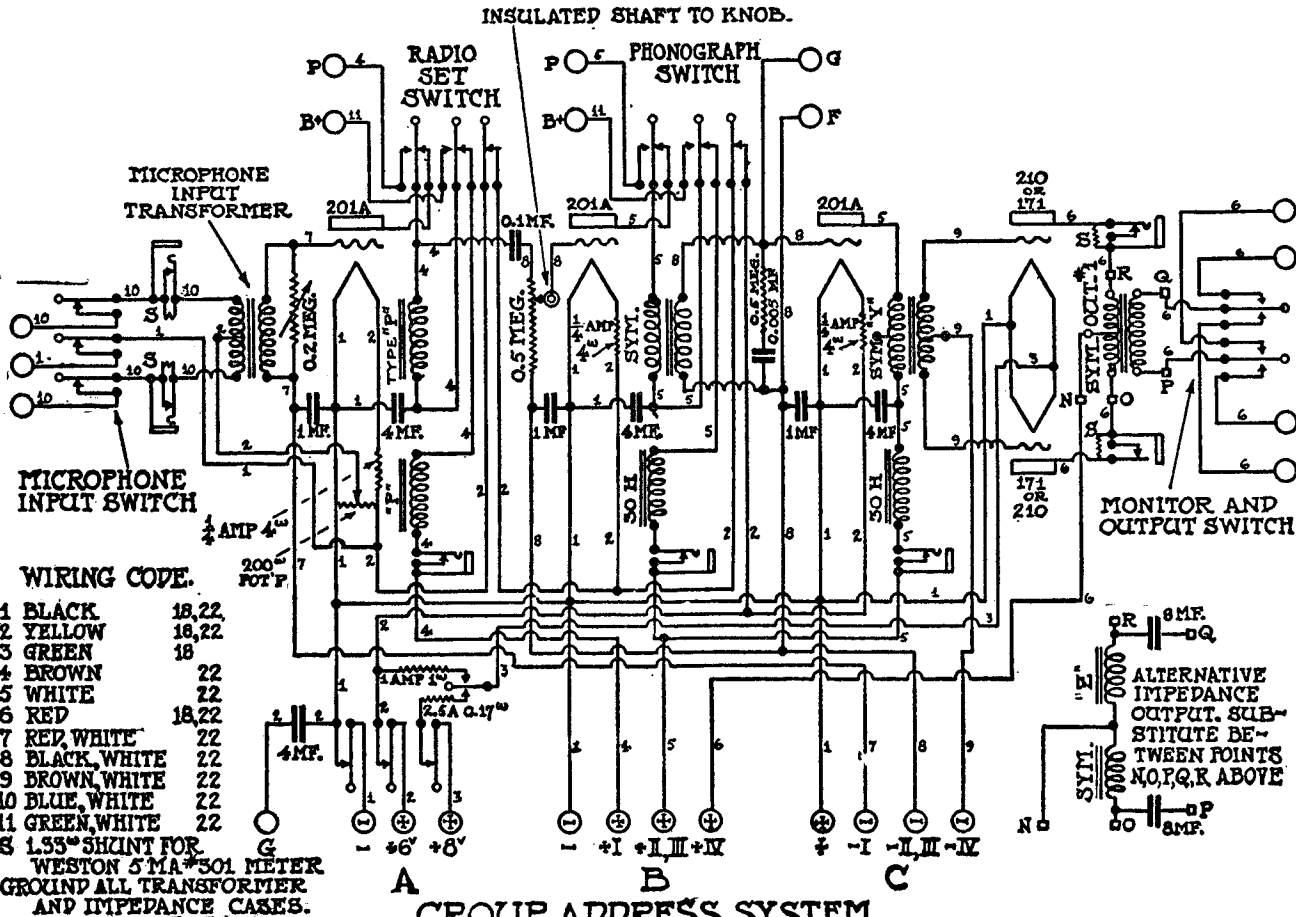
Model Remler "29" Receiver



Model Remler "29" Power Pack

MODEL S-100
 MODEL PAM-19
 MODEL Amplifier

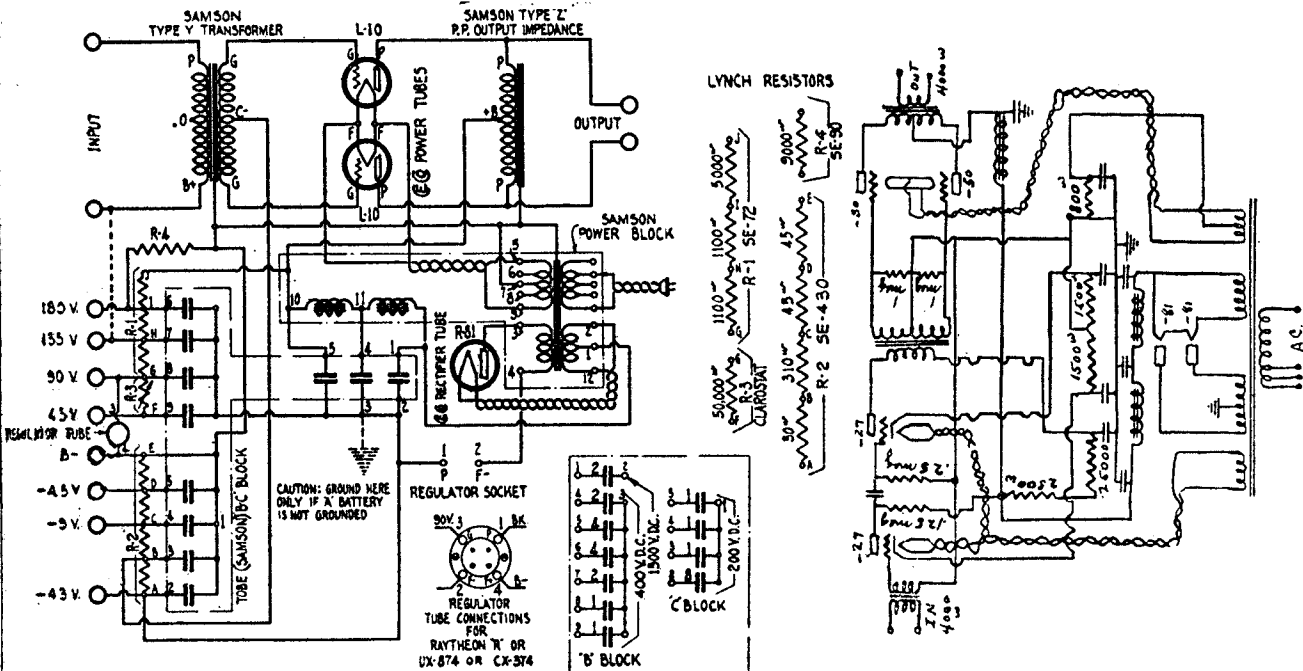
SAMSON ELECTRIC CO.



WIRING CODE.

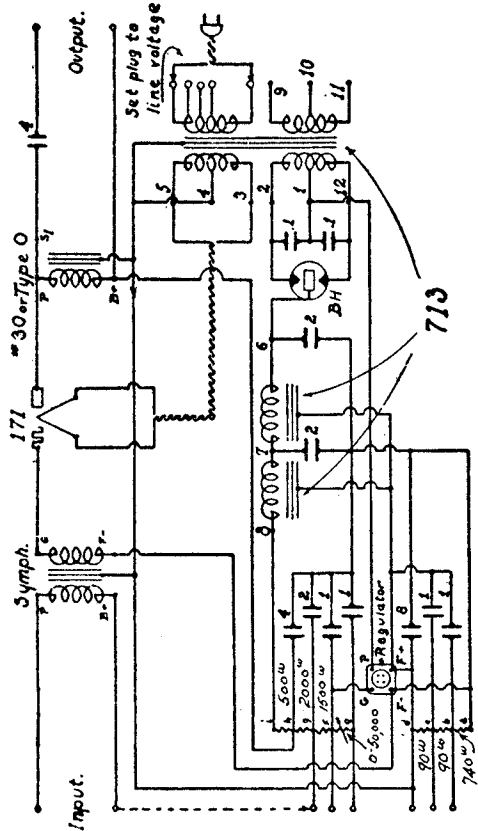
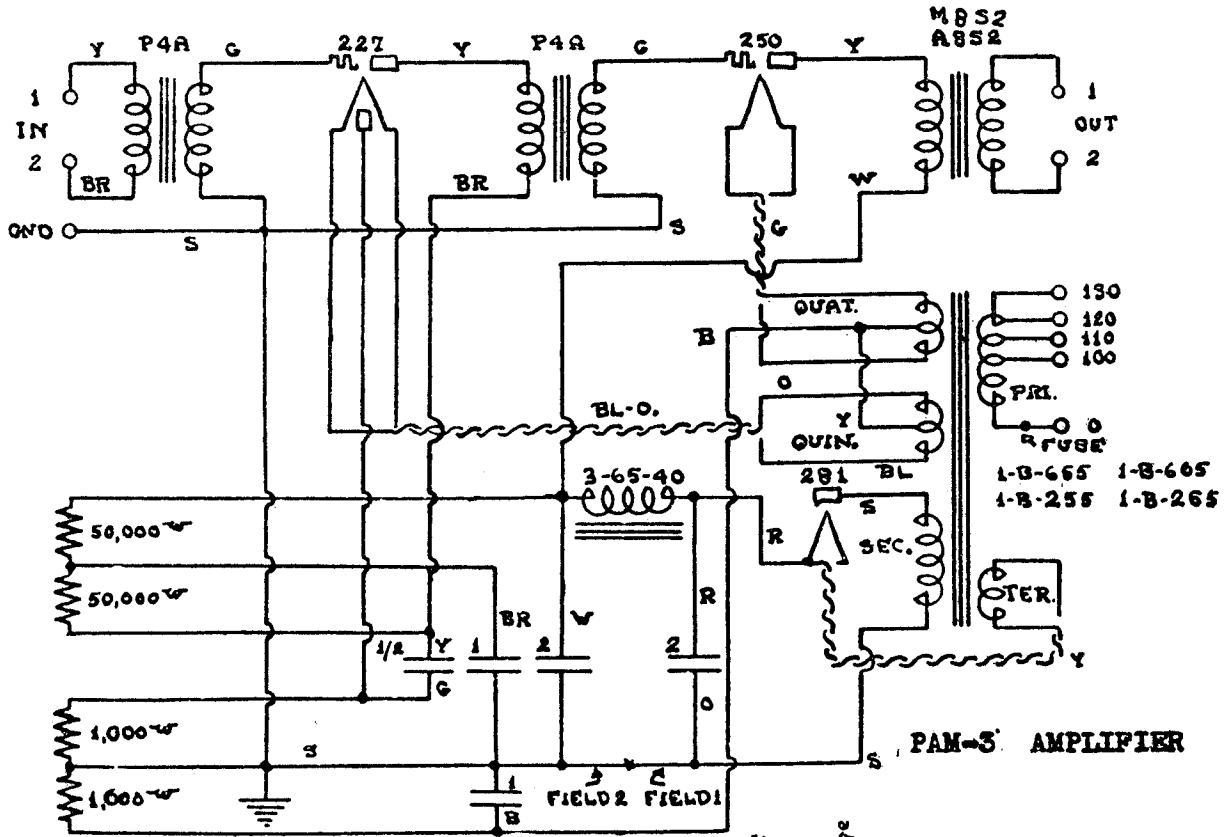
- 1 BLACK 18,22
 - 2 YELLOW 18,22
 - 3 GREEN 18
 - 4 BROWN 22
 - 5 WHITE 22
 - 6 RED 18,22
 - 7 RED, WHITE 22
 - 8 BLACK, WHITE 22
 - 9 BROWN, WHITE 22
 - 10 BLUE, WHITE 22
 - 11 GREEN, WHITE 22
 - 12 1.53" SHUNT FOR WESTON 5 MA * 501 METER
- GROUND ALL TRANSFORMER AND IMPEDANCE CASES.

GROUP ADDRESS SYSTEM
 SAMSON S-100 AMPLIFIER

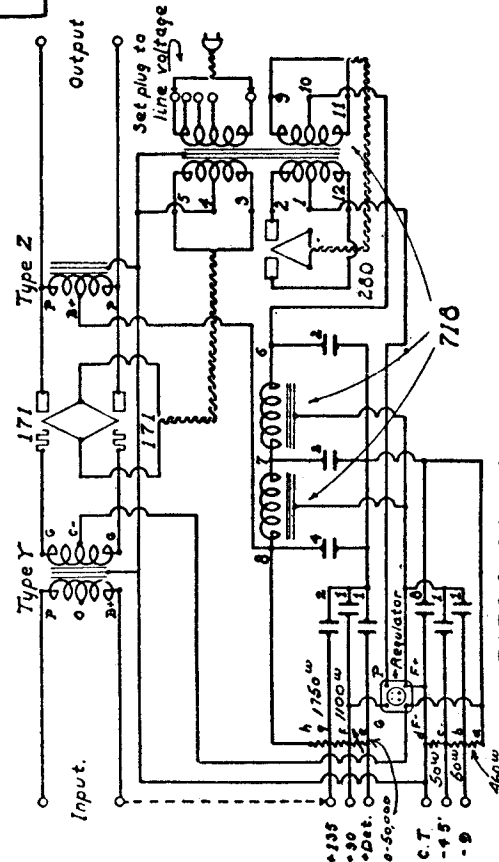


MODEL PABC-2
MODEL PABC-3
MODEL PAM-3

SAMSON ELECTRIC CO.



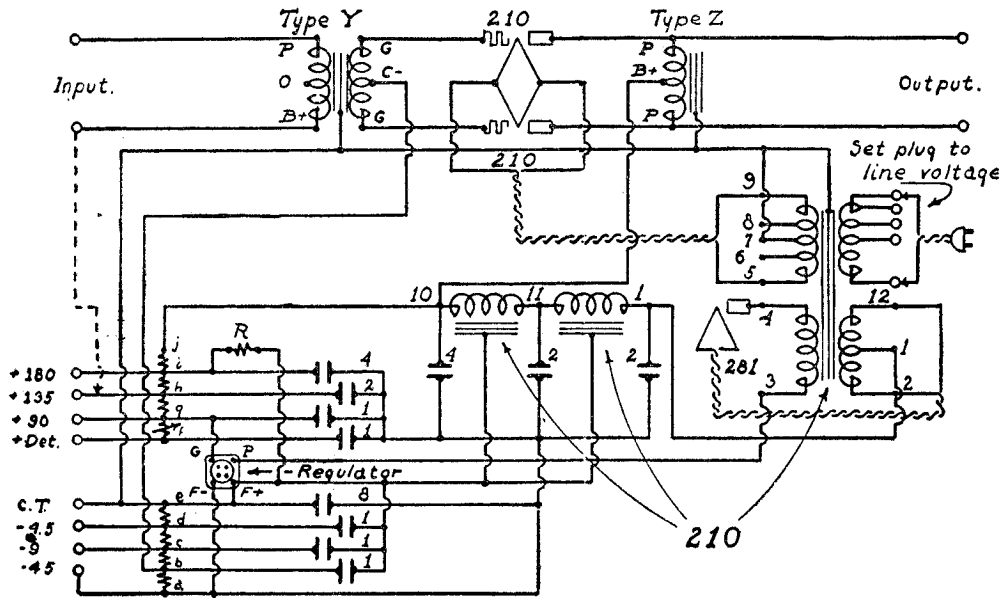
PABC-2 Schematic.



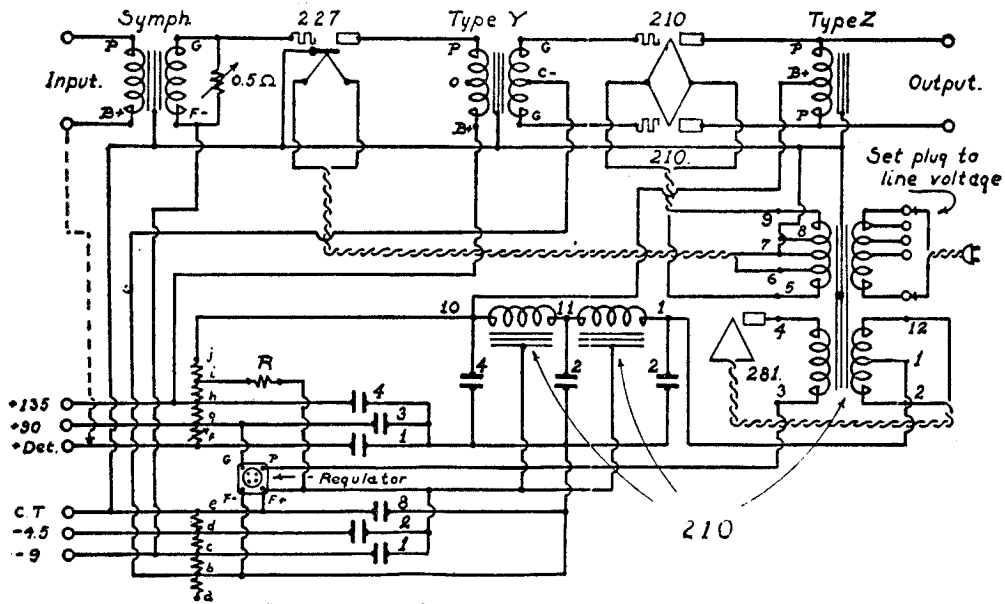
PABC-3 Schematic.

SAMSON ELECTRIC CO.

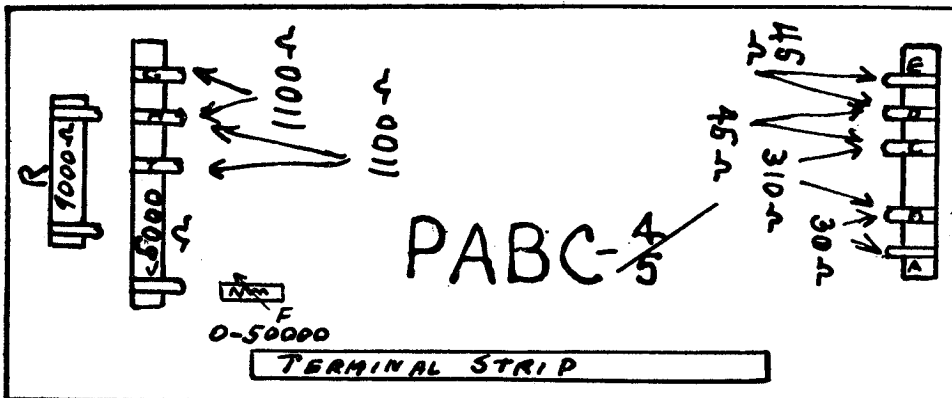
MODEL PABC-4
MODEL PABC-5



PABC-4 Schematic.



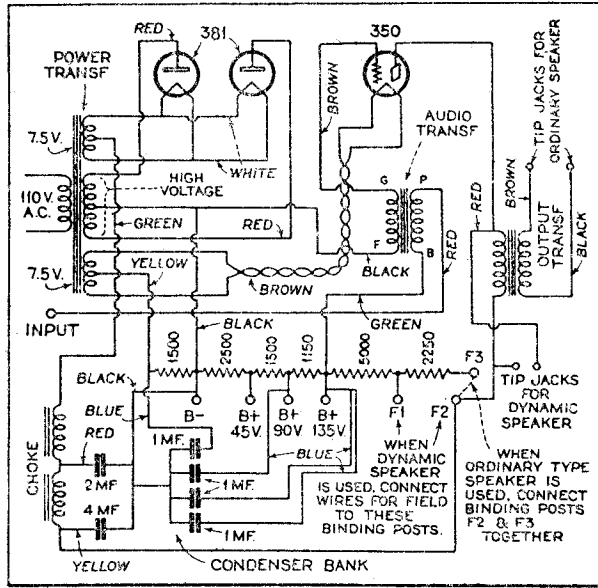
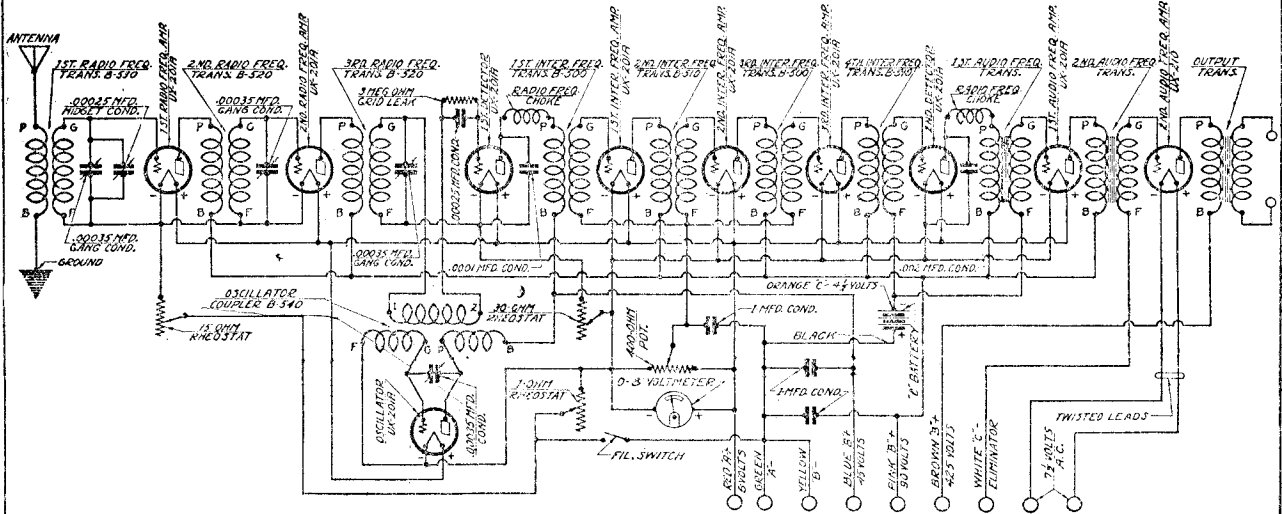
PABC-5 Schematic



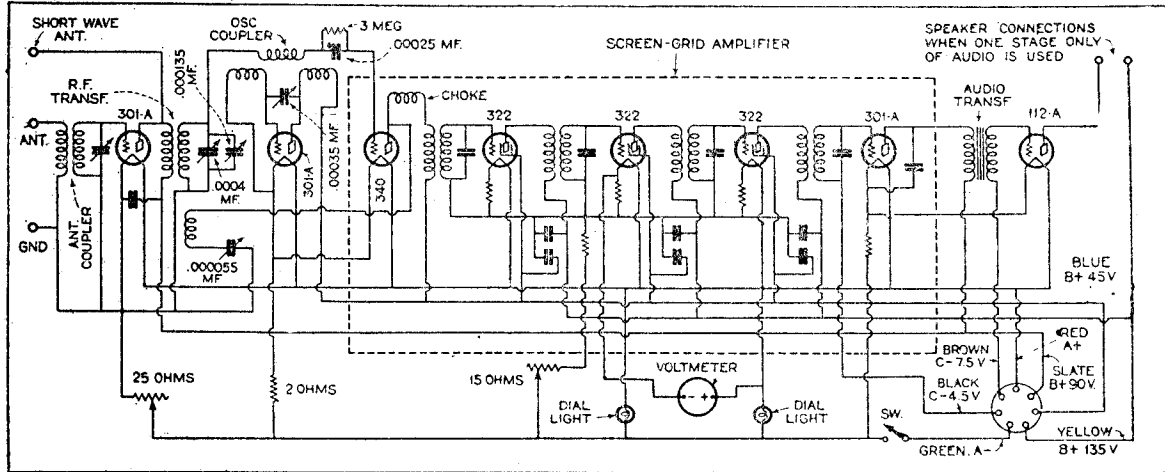
SCOTT TRANSFORMER CO.

MODEL "World Record" 10
MODEL Shield Grid "9"

Model World Record 10

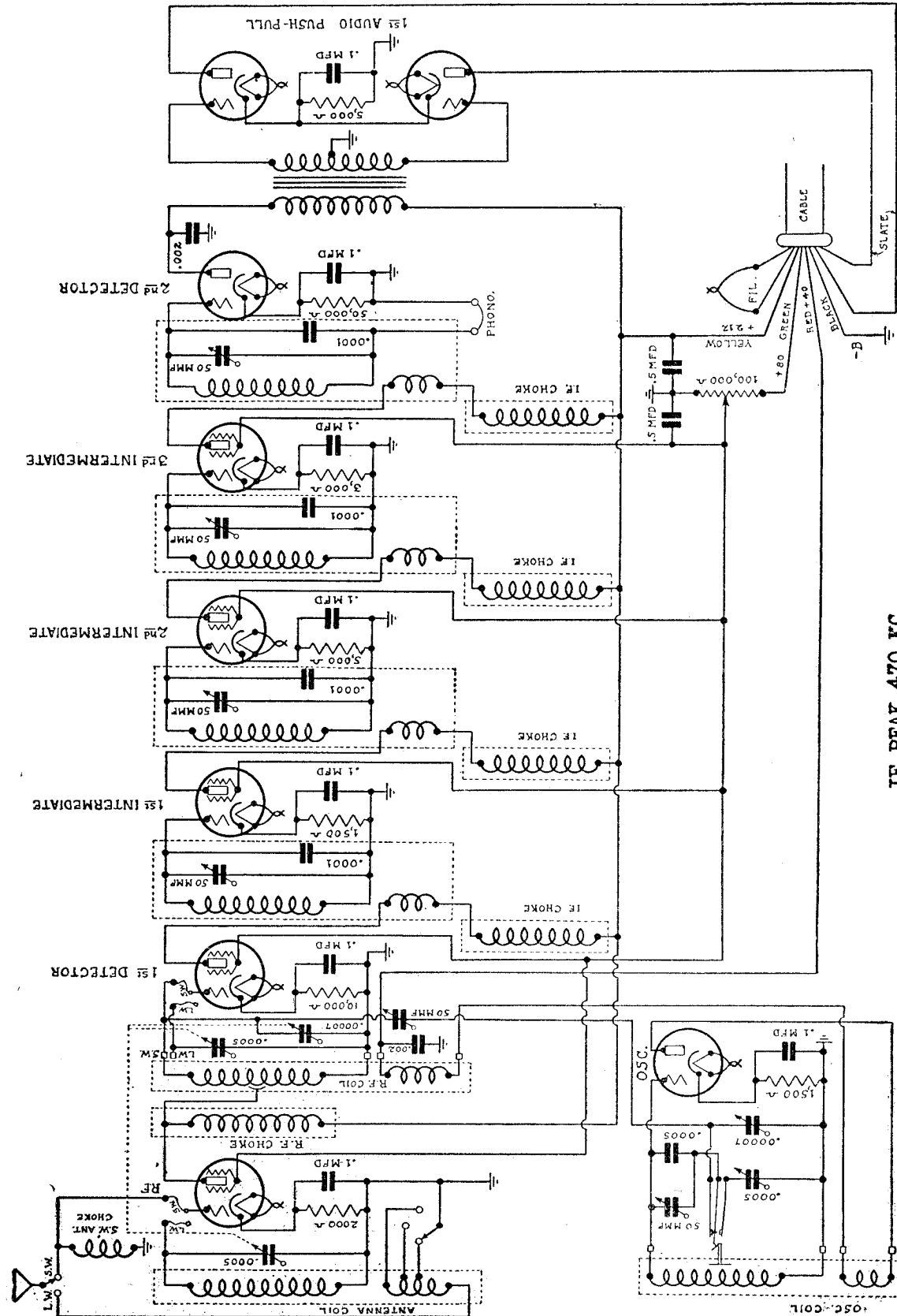


Model Shield Grid 9
Power Pack



Model Shield Grid 9 Receiver Schematic

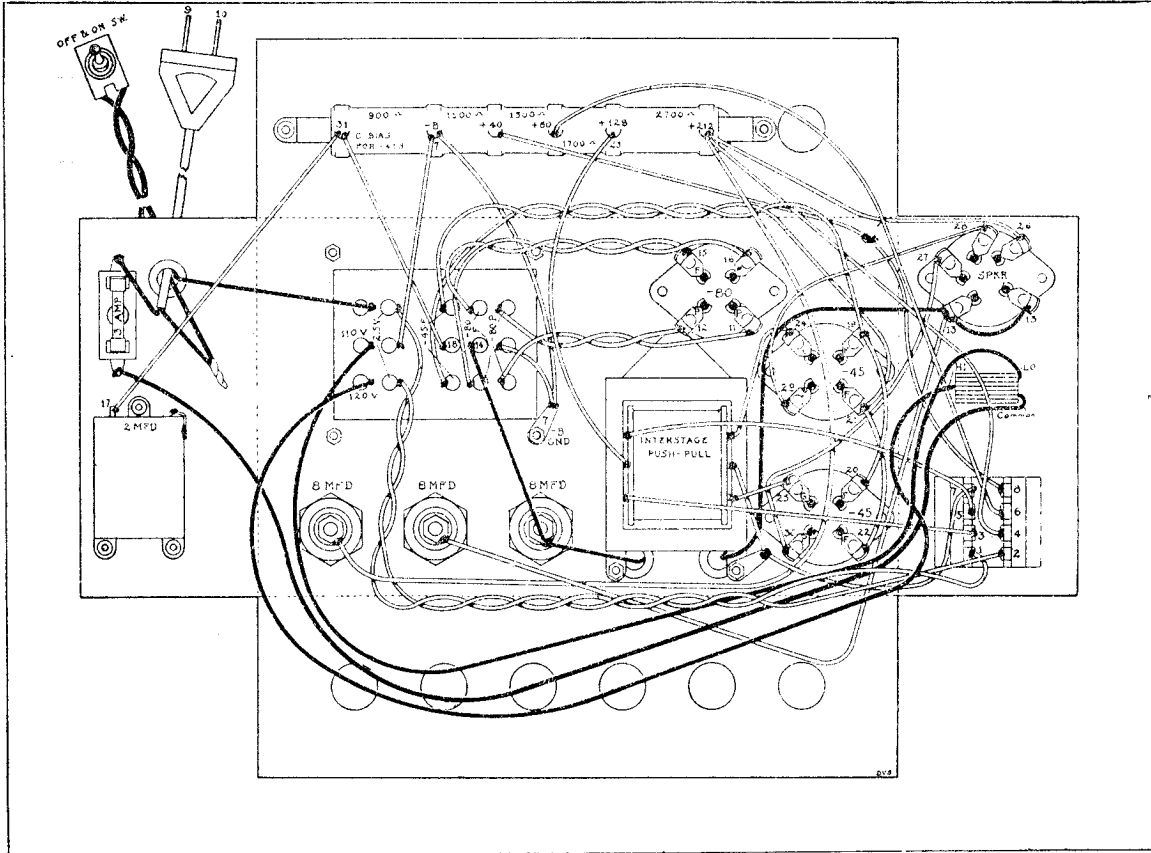
SCOTT TRANSFORMER CO. MODEL "All Wave" Super Receiver Schematic



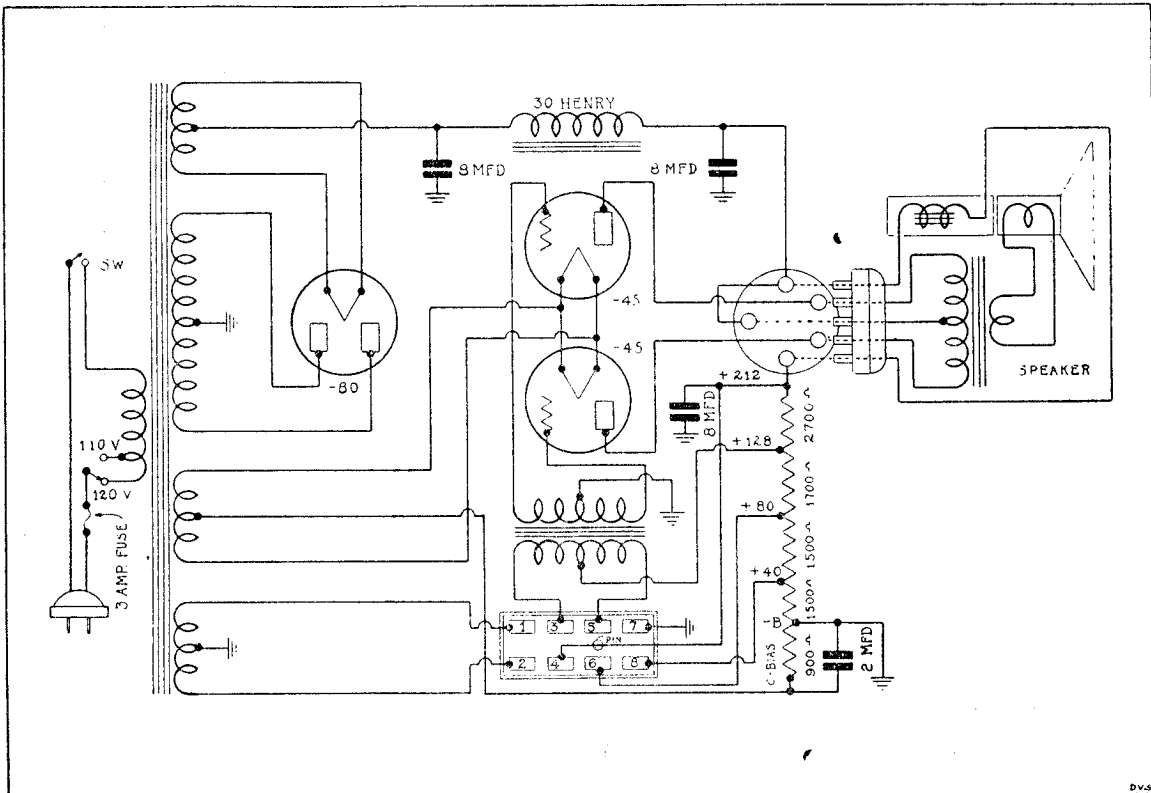
IF PEAK 470 KC

SCOTT TRANSFORMER CO.

MODEL "All Wave" Super
145 Power Pack
Schematic- Chassis



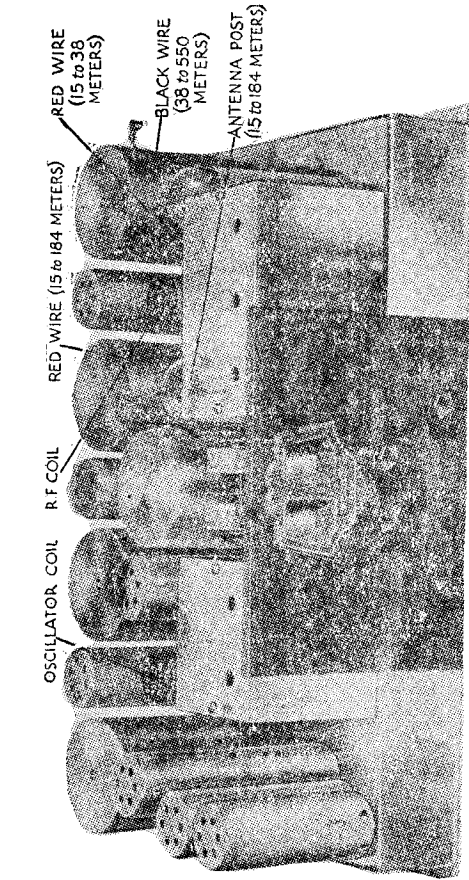
Wiring Diagram of 145 Power Pack



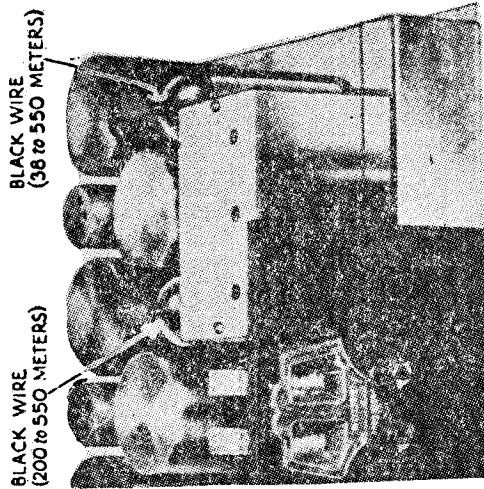
Schematic Diagram of 145 Power Pack

SCOTT TRANSFORMER CO.

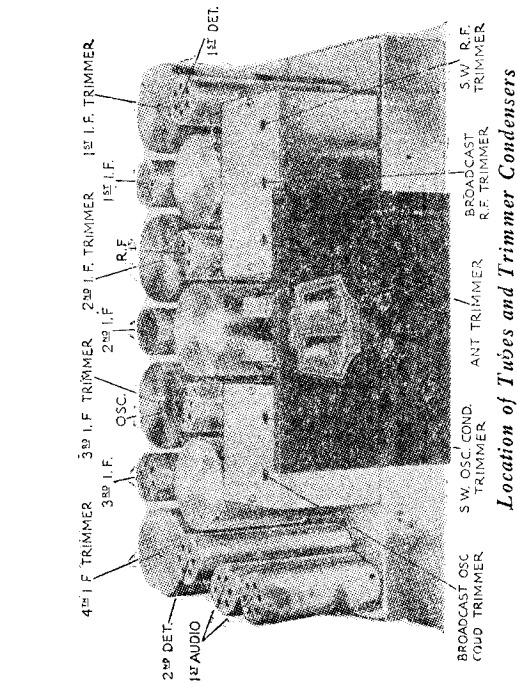
MODEL "All Wave" Super
150 Power Pack
Trimmer Locations
Control Box



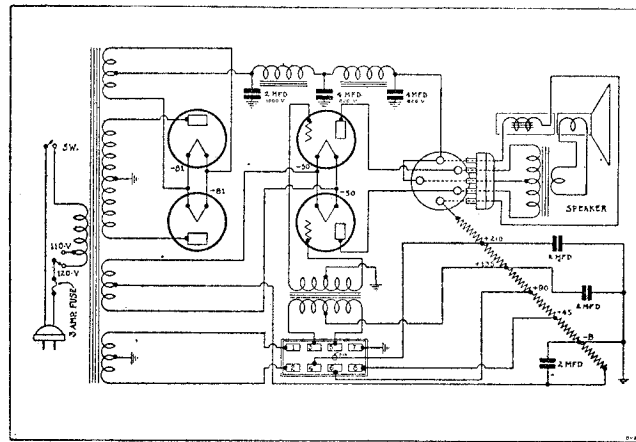
View of Screen Grid Connections for Short Wave Reception



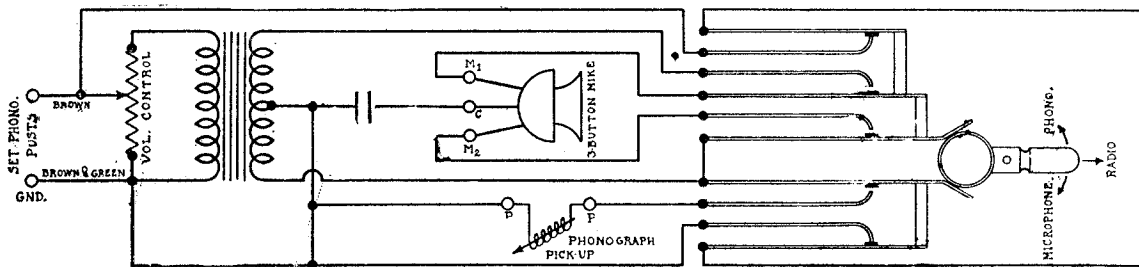
View of Screen Grid Connections for Broadcast Reception



Location of Tubes and Trimmer Condensers



Schematic Diagram for 150 Power Pack



Note: when single button mike is used, connect between M₁ and C₂ is not used

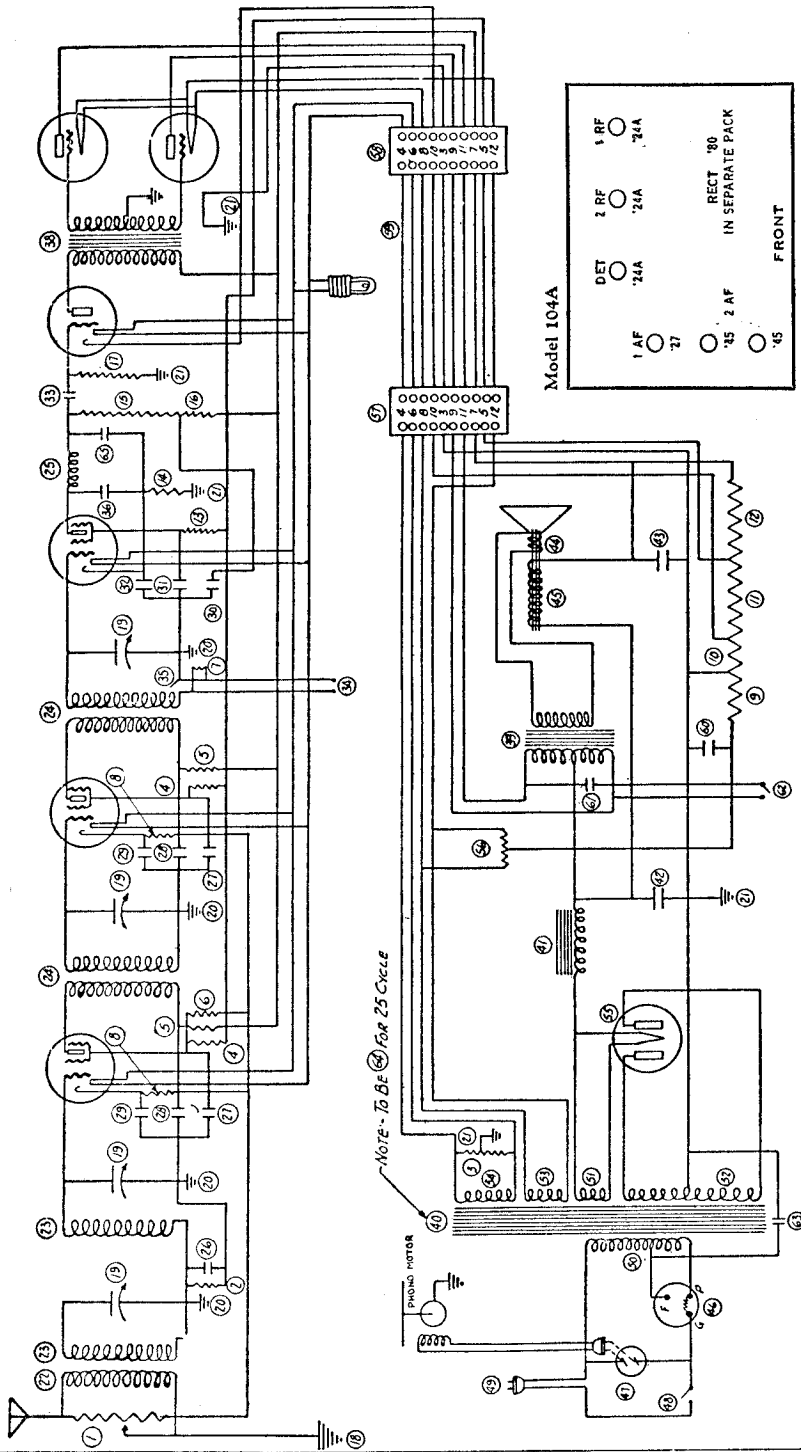
Schematic Diagram of Scott Control Box

MODEL 11,12,15,16
(104)

SENTINEL RADIO CORP.

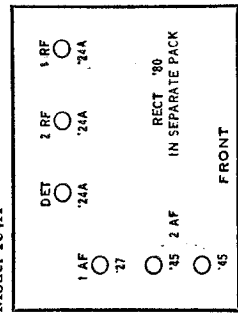
SENTINEL—Models 11-12-15-16
Line Voltage 115—Volume Control Full On

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES					MILLIAMPERES				
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID SPACE	NORMAL GRID SPACE	CATHODE TO HEATER	SCREEN GRID L. H. 50 PLATE	PLATE R. H. 50 PLATE	TUBE TEST	PLATE CURRENT CHANGE	
224	1 R.F.	2,36	176	2,2	87	-	-	3				
224	2 R.F.	2,36	176	2,2	87	-	-	3				
224	Det.	2,37	62,5*	4,5	10*	-	-	.25				
227	1 A.F.	2,4	157	-	12,5	-	-	4,75				
245	PP-AF	2,5	235	-	46	-	-	32,5				
245	PP-AF	2,5	235	-	46	-	-	32,5				
280	Rect.	5,0	-	-	-	-	55	55				



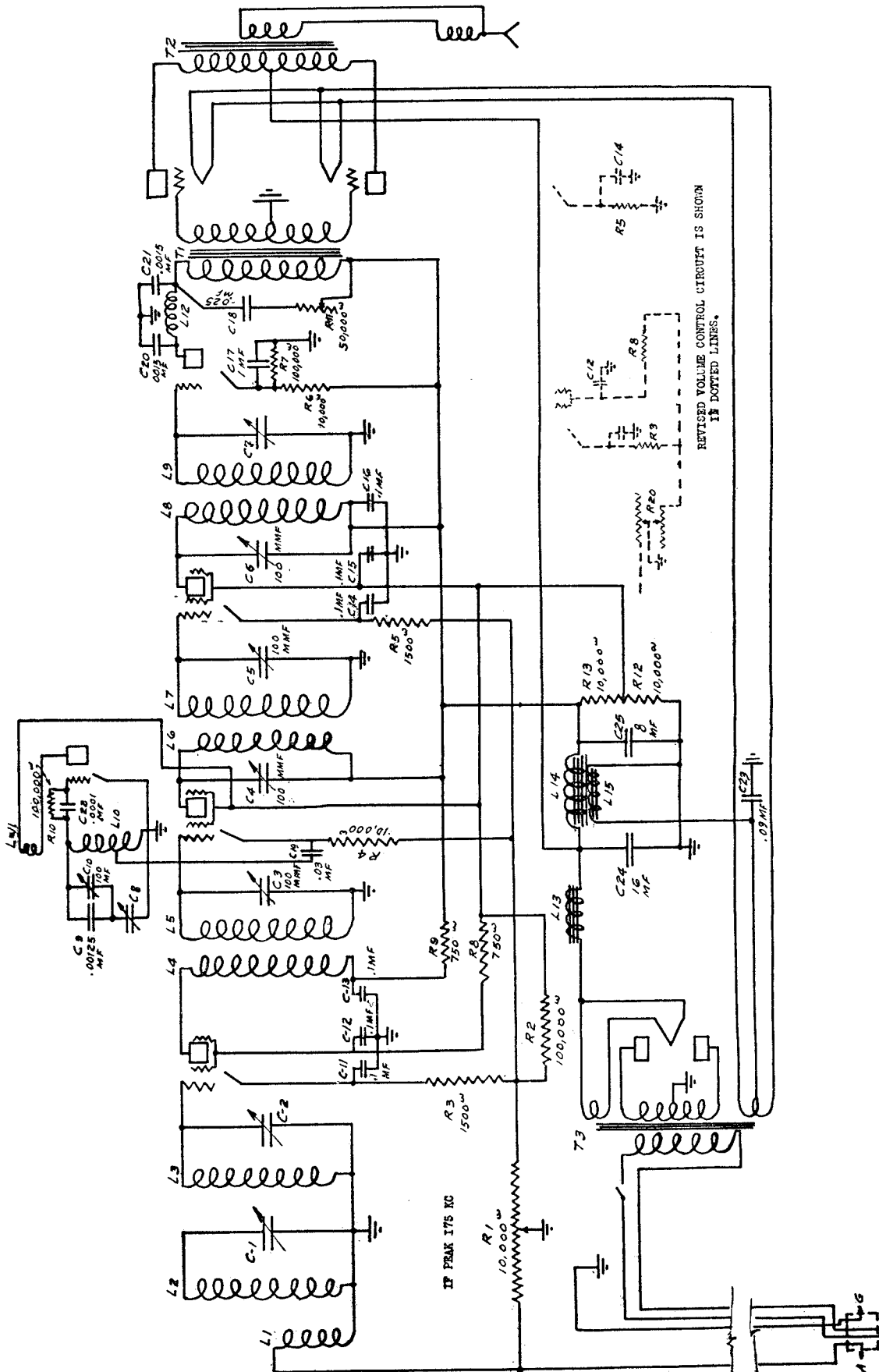
DESCRIPTION	R	I	E	W	DESCRIPTION	DESCRIPTION
(1) VOLUME CONTROL	10 M	0	0	0	(38) SET EXTERNAL GROUND	(38) PHONOGRAPH SWITCH
(2) COUPLING RESISTOR	750	0	0	0	(39) ROTOR BRUSH GROUND	(39) DETECTOR R.F. BY-PASS COND. 0.005mf. MICA
(3) CENTER TAP RESISTOR	20	125	315	75	(40) CHASSIS GROUND	(40) 245 FILAMENT WINDING
(4) SCREEN FILTER RESISTANCE	750	1	75	0.007	(41) TUNING CONDENSER	(41) 1224 FILAMENT WINDING
(5) PLATE FILTER RESISTANCE	750	4	3	.012	(42) PRIMARY COIL 630 mA'S	(42) RECTIFIER TUBE TYPE 280
(6) BIAS RESISTOR	100 M	1	93	.09	(43) BAND PASS INDUCTANCE-5	(43) CENTER TAP 245 FILAMENT
(7) PICKUP LOAD RESISTANCE	2500	0	0	0	(44) R.F. TRANSFORMERS	(44) JONES PLUG AND RECEPTAL
(8) CATHODE BIAS RESISTANCE	750	4	3	.012	(45) COUPLING CONDENSER 0.25mf. 300V	(45) CABLE TERMINAL STRIP
(9) 245 BIAS RESISTANCE	775	62	50	3.1	(46) AUDIO BIAS RESISTANCE	(46) 18 1/2 CABLE 10 CONDUCTOR
(10) SCREEN RESISTANCE	215	44	125	.55	(47) SCREEN FILTER COND. 25mf. 200V	(47) 0.25 PAPER CONDENSER 300V
(11) PICKUP LOAD RESISTANCE	1850	46	80.5	3.6	(48) PLATE FILTER COND. 1mf. 300V	(48) 1mf. PAPER COND. 1000V
(12) FIELD LOAD RESISTANCE	2100	46	93	4.3	(49) CATHODE BY-PASS COND. 1mf. 200V	(49) TONE CONTROL SWITCH
(13) SCREEN BLEEDER RESISTANCE	15 M	0.55	10	.006	(50) DETECTOR FILTER COND. 5mf. 300V	(50) .002 BY-PASS COND
(14) DETECTOR BIAS RESISTANCE	5 M	.38	19	.0007	(51) SCREEN FILTER COND. 25mf. 200V	(51) PHONO MOTOR OUTLET
(15) PLATE LOAD RESISTANCE	300 M	.32	96	.03	(52) CATHODE BY-PASS 1mf. 200 V.	(52) LINE SWITCH
(16) DETECTOR FILTER RESISTANCE	50 M	.32	16	.005	(53) COUPLING COND. 0.005mf. MICA	(53) POWER TRANS. 4296A FOR 25-CYCLE
(17) GRID RESISTANCE	1 M M.	0	0	0	(54) PICKUP JACK	(54) RECTIFIER R.F. BY-PASS 0.001mf.

NOTE-- To Be (34) for 25-CYCLE



SENTINEL RADIO CORP.

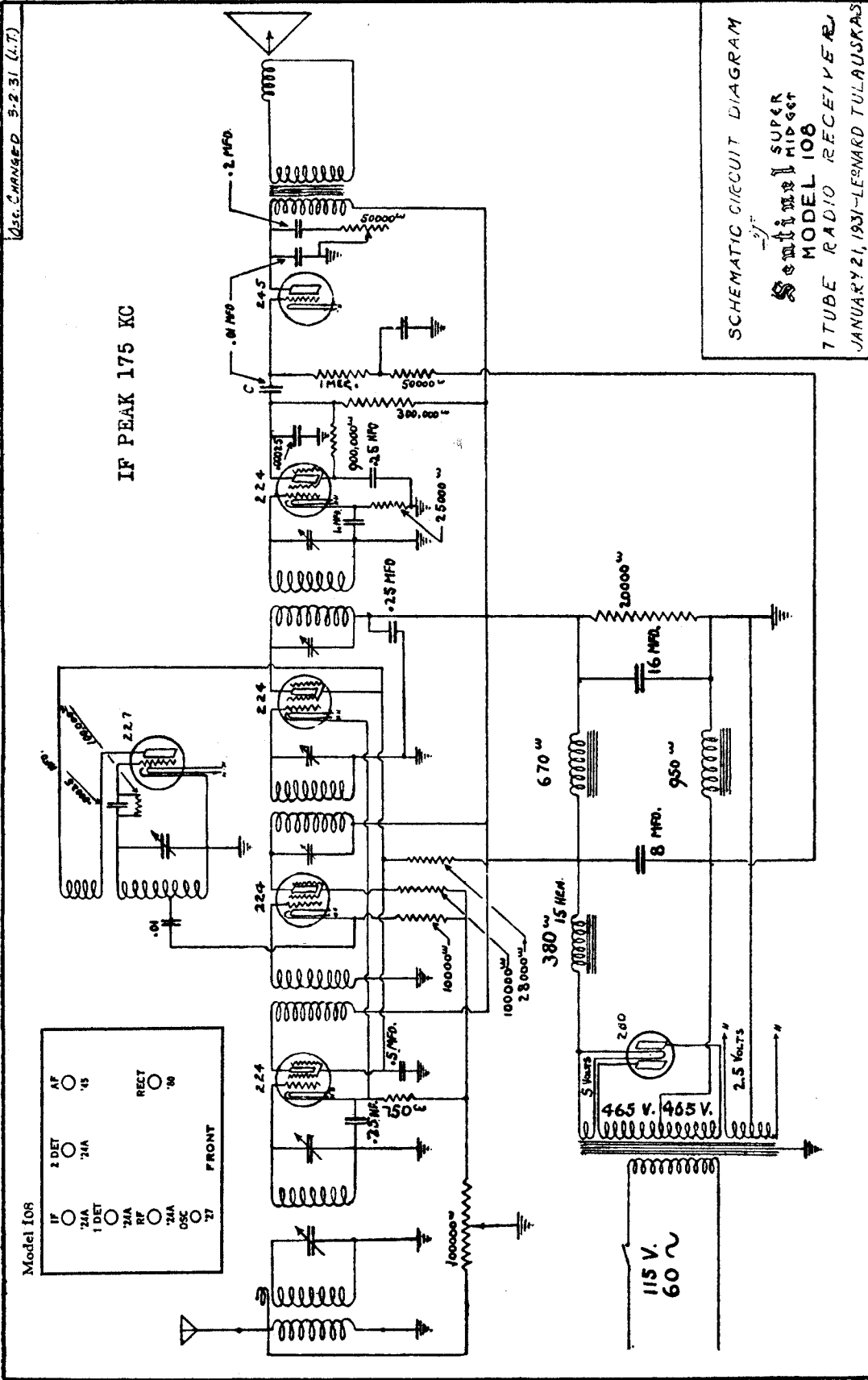
MODEL 106-B
With Changes



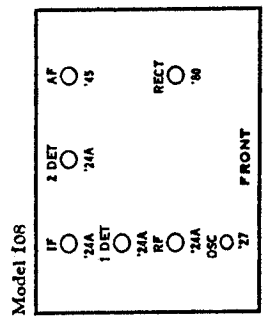
REVISED VOLUME CONTROL CIRCUIT IS SHOWN
IN DOTTED LINES.

SENTINEL RADIO CORP.

1 Ass. CHANGED 3-2-31 (L.T.)



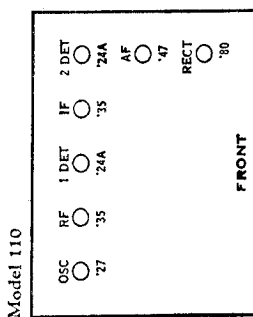
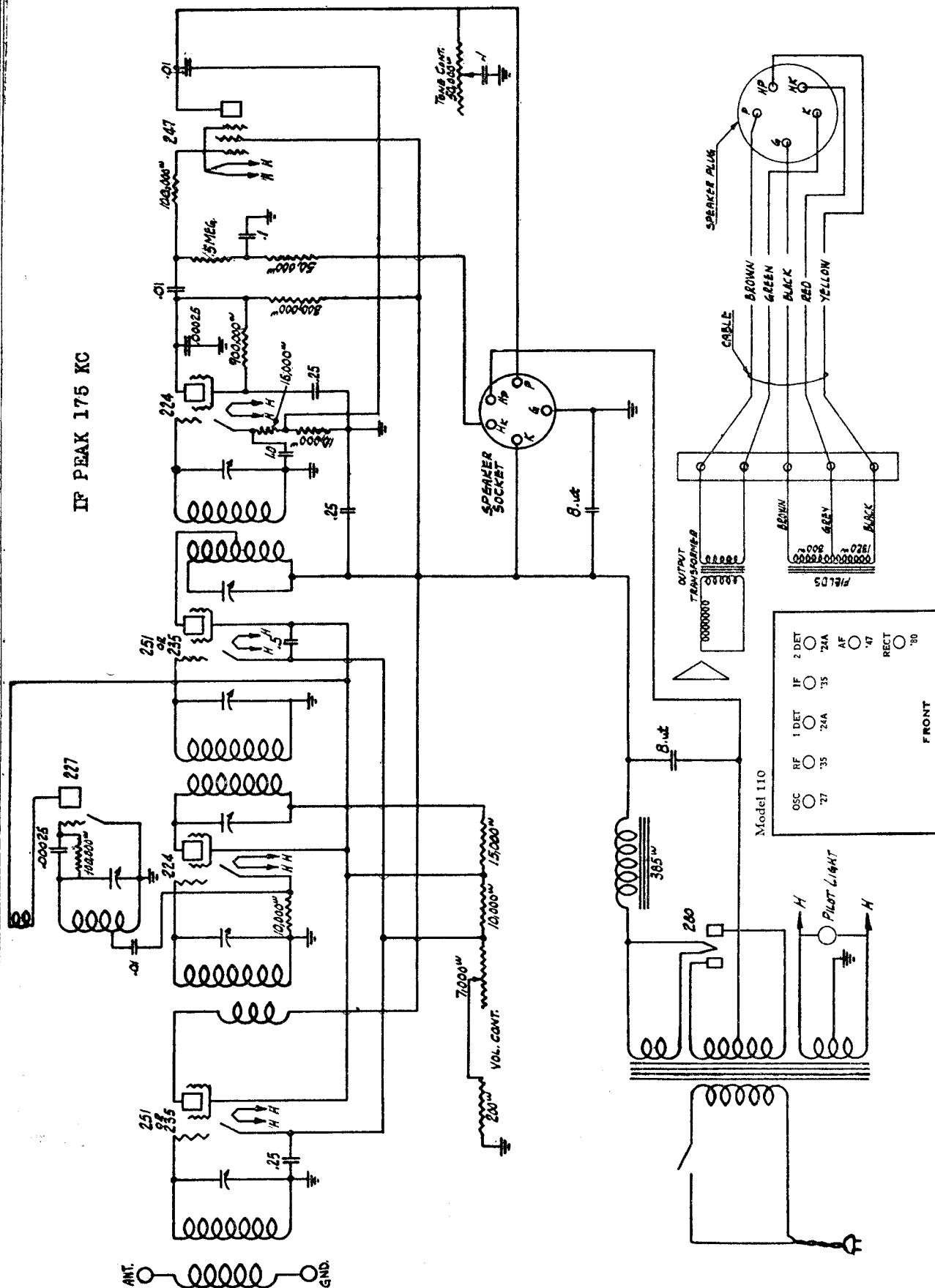
SCHEMATIC CIRCUIT DIAGRAM
 -37-
 Sentinels SUPER
 MODEL 108
 7 TUBE RADIO RECEIVER
 JANUARY 21, 1931-LEONARD TULAUSKAS



SENTINEL RADIO CORP.

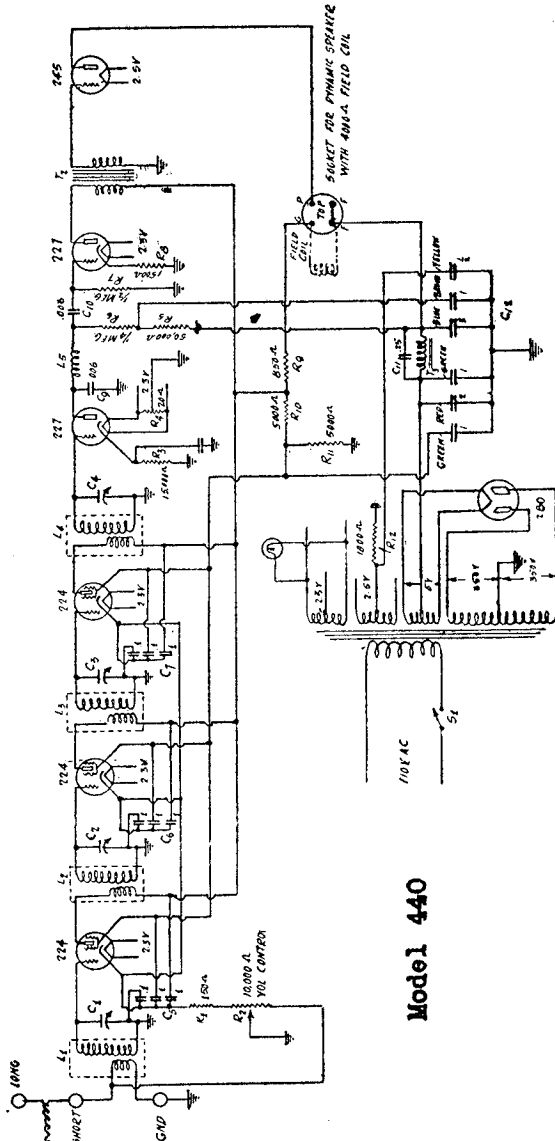
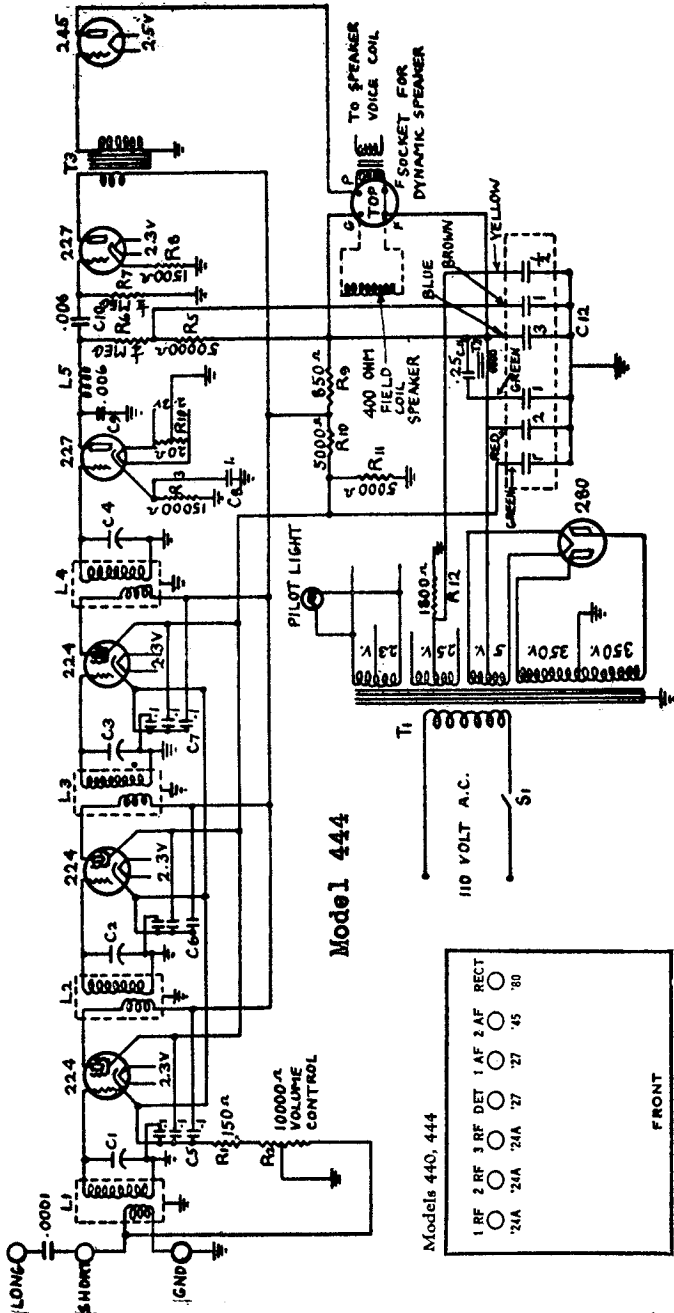
MODEL 108-A, 110
Schematic

IF PEAK 175 KC



MODEL 440
MODEL 444

SENTINEL RADIO CORP.

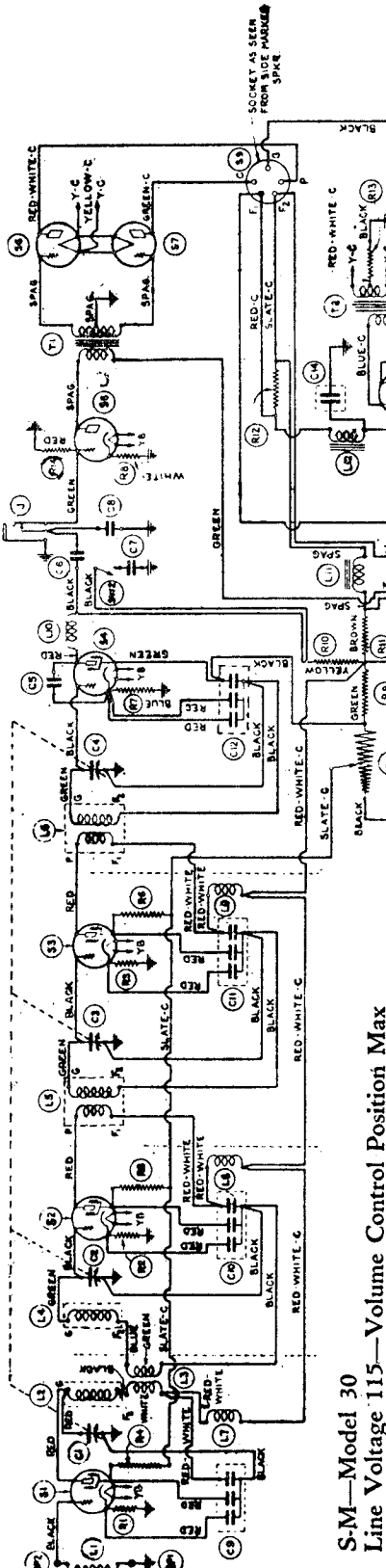


TUBE VOLTAGES		FILAMENT	B	C	NORMAL	SCREEN
Type of Tube	Position of Tube	VOLTS	VOLTS	VOLTS	PLATE M.A.	VOLTS
224	1st RF	2.35	155	2	3.5	75
224	2nd RF	2.35	155	2	3.5	75
224	3rd RF	2.35	155	2	3.5	75
227	Detector	2.35	110	18	.2	
227	1st Audio	2.35	122	8	10.5	
245	Output	2.4	245	50	27	
280	Rectifier	4.75		*55		

350 A.C. Volts each side high voltage secondary
 *51-55 M.A. each plate
 115 volts line
 With volume control to full on position

SILVER - MARSHALL, INC.

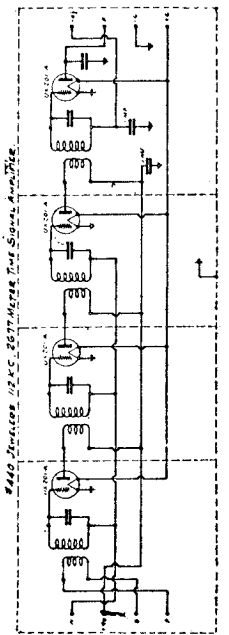
MODEL 30
Schematic, Voltage
MODEL 440



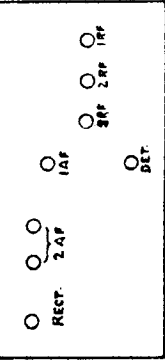
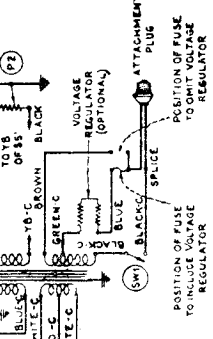
S-M—Model 30
Line Voltage 115—Volume Control Position Max

TUBE ORDER NO.	TUBE TYPE	TUBE OUT			RECHORD PLUG IN SOCKET OF SET			TUBE IN SOCKET		
		1ST FT. VOLTS	2ND FT. VOLTS	3RD FT. VOLTS	5	6	7	8	9	10
1	224	1 R.F.	2.25	140	1.0	2.0	60	1.0	2.0	60
2	224	2 R.F.	2.25	140	1.4	2.3	58	1.4	2.3	58
3	224	3 R.F.	2.25	140	1.2	3.2	58	1.2	3.2	58
4	224	DET.	2.25	40	5	10	40	5	10	40
5	227	1 A.F.	2.3	176	6.7	12	6.5	6.7	12	6.5
6	245	2 A.F.	2.3	205	40	28	—	40	28	—
7	245	3 A.F.	2.3	205	40	28	—	40	28	—
8	280	Rect.	4.7	—	—	75	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—

THIS DATA APPLIES TO 'B', 'C', 'D' AND 'E' VARIATIONS



440 JEWELERS TIME SIGNAL AMPLIFIER



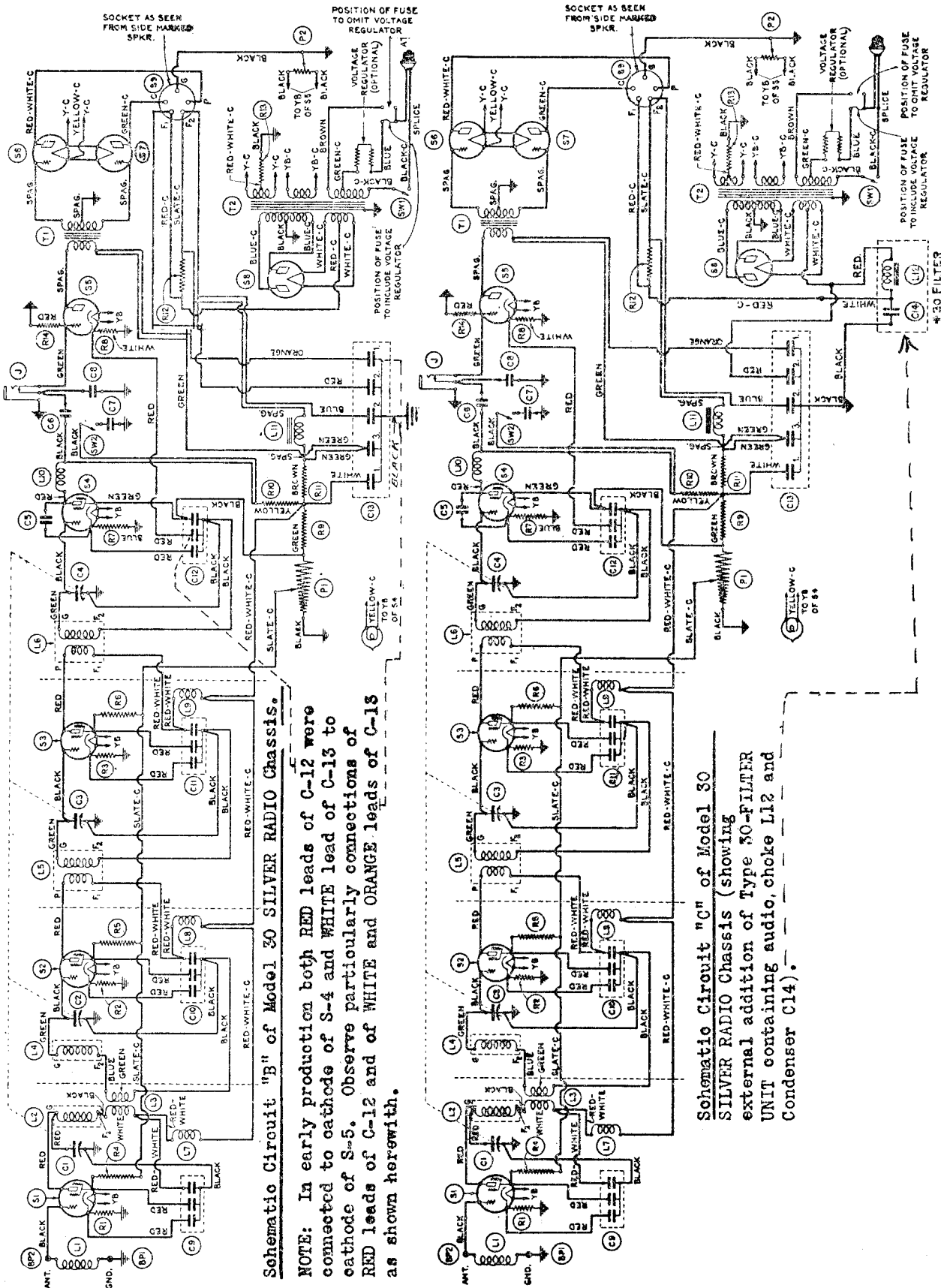
- NOTE 2 - WHITE LEAD OF C8 REMOVED FROM S5 TO T1 ONE RED LEAD OF C8 REMOVED FROM S4 TO S5.
- NOTE 3 - RED LEAD OF C15 REMOVED FROM F. OF S9 TO L12. L12 INSERTED IN THE RED LEAD OF T1. C14 ADDED BETWEEN L12 AND R12 AND GROUND.
- NOTE 4 - RED LEAD OF C12 CONNECTED TO S5 RETURNED TO S4.
- NOTE 5 - RED LEAD OF C13 REMOVED FROM L12 TO F. OF S9 C14 REMOVED TO OPPOSITE SIDE OF L12.

PART NO.	ASSEMBLY NO.
MATERIAL	SCHEMATIC NO. 30
SKETCH BY	A.K. SCALF
DRAWN BY	A.K. SCALF
CHECKED BY	J. J. APPROVED
DATE	5-24-38

- LEGEND
- BPI-SPR - BINDING POSTS
 - C1-C3-C4-C6-C6000MFD COND
 - C5 - 500 MFD COND
 - C8 - 200 MFD COND
 - C9 - 100 MFD COND
 - C13 - 4-2-1 MFD - GRATED COND
 - J - JACK
 - L1-L15-49-140 - #278 CHOKE
 - L2-L4-#122 COILS
 - L5 - #278 COILING COIL
 - L6 - #278 CHOKE
 - L11 - #338 CHOKE
 - L12 - #339 CHOKE
 - T1 - #170 AUDIO TRANS.
 - T2 - #337U PWR-TRANS.
 - R1-1000 Ω POT TAPERED
 - R2-200 Ω POT
 - R4-R5-R3-400 Ω
 - R6-R8-R9-3000 Ω
 - R10-1000 Ω
 - R11-1000 Ω
 - R12-10000 Ω
 - R13-1000 Ω
 - R14-100 Ω
 - R15-100 Ω
 - R16-2 MEG OHM
 - S1-S2-S3-S4-S5-U1-U2-U3
 - S6-S7-U1-U2-U3
 - S8-S9-U1-U2-U3
 - S10-SPKR SOCKET
 - S11-SPKR SOCKET
 - S12-OVERTONE SWITCH
 - T1-#170 AUDIO TRANS.
 - T2-#337U PWR-TRANS.

SILVER - MARSHALL, INC.

MODEL 30
Schematic Circuit B
Schematic Circuit C



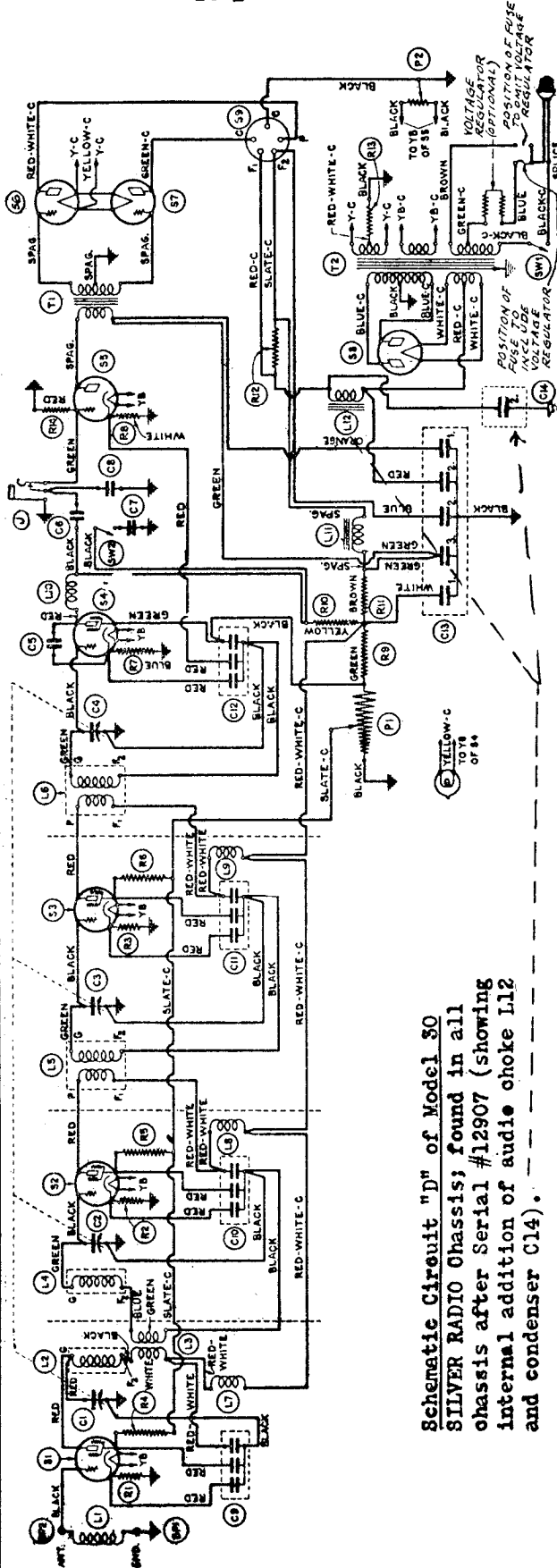
Schematic Circuit "B" of Model 30 SILVER RADIO Chassis.

NOTE: In early production both RED leads of C-12 were connected to cathode of S-4 and WHITE lead of C-13 to cathode of S-5. Observe particularly connections of RED leads of C-12 and of WHITE and ORANGE leads of C-13 as shown herewith.

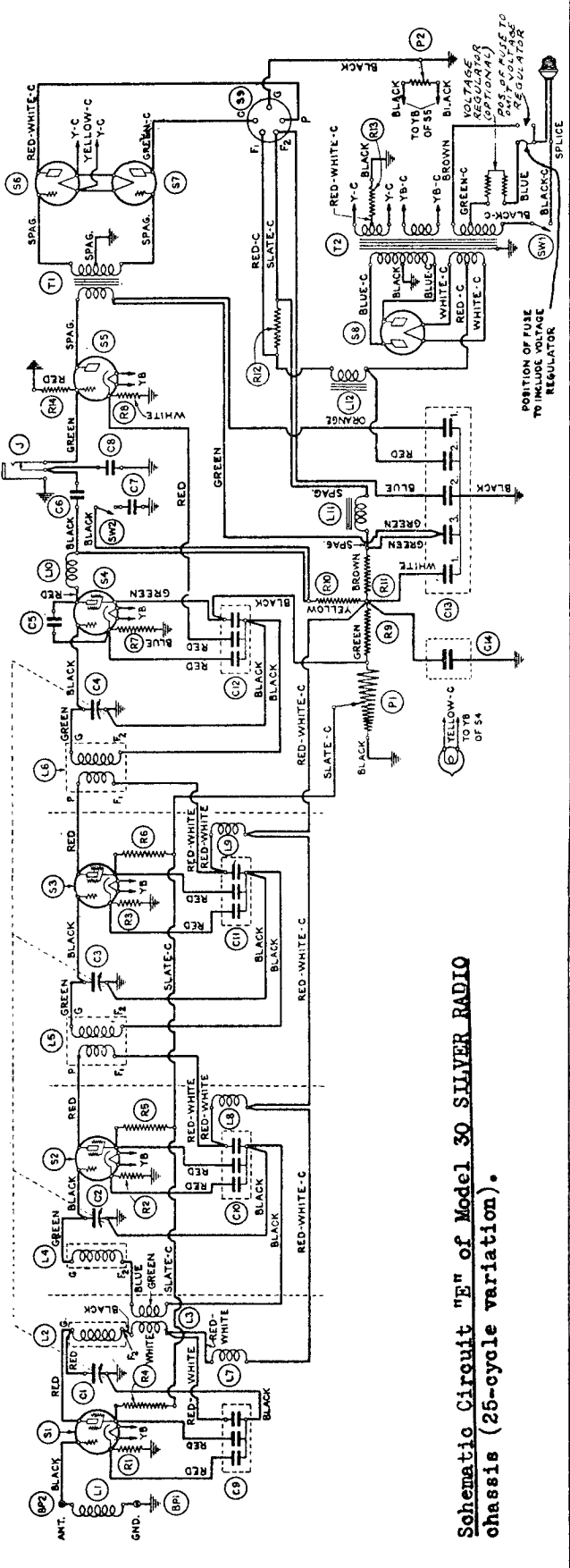
Schematic Circuit "C" of Model 30 SILVER RADIO Chassis (showing external addition of Type 30-FILTER UNIT containing audio, choke L12 and Condenser C14).

MODEL 30
Schematic Circuit D
Schematic Circuit E

SILVER - MARSHALL, INC.

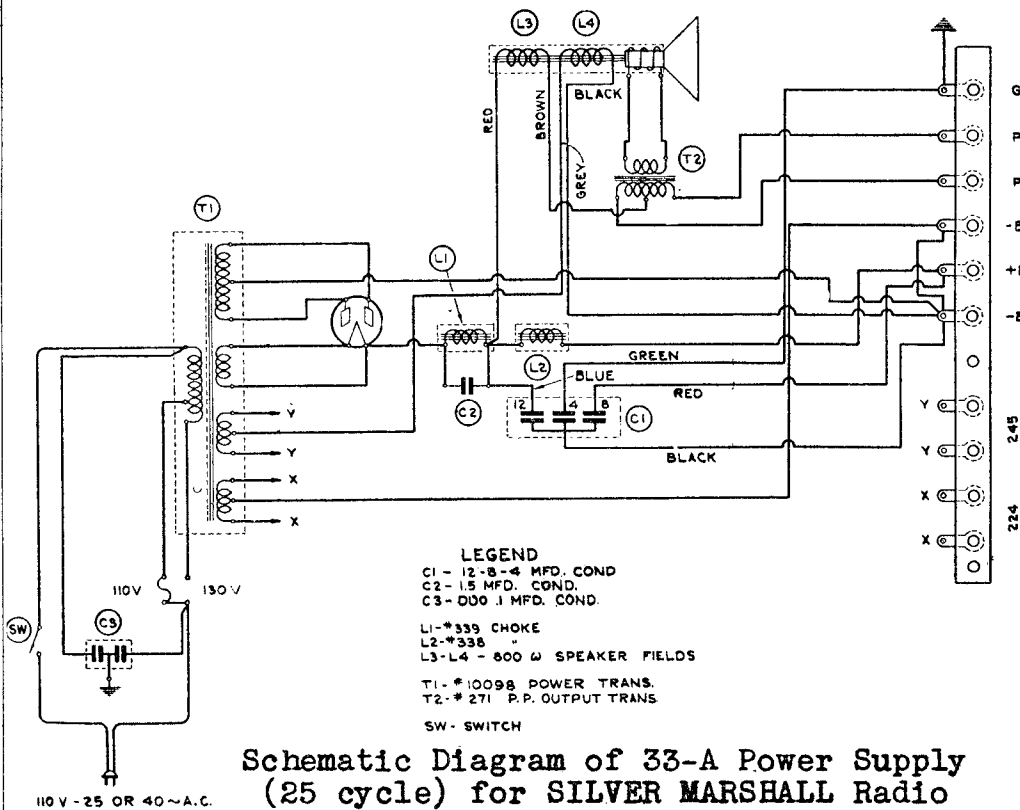


Schematic Circuit "D" of Model 30 SILVER RADIO Chassis; found in all chassis after Serial #12907 (showing internal addition of audio choke L12 and condenser C14).



Schematic Circuit "E" of Model 30 SILVER RADIO chassis (25-cycle variation).

MODEL 33-A Power Supply
SILVER - MARSHALL, INC. 25 and 60 cycles

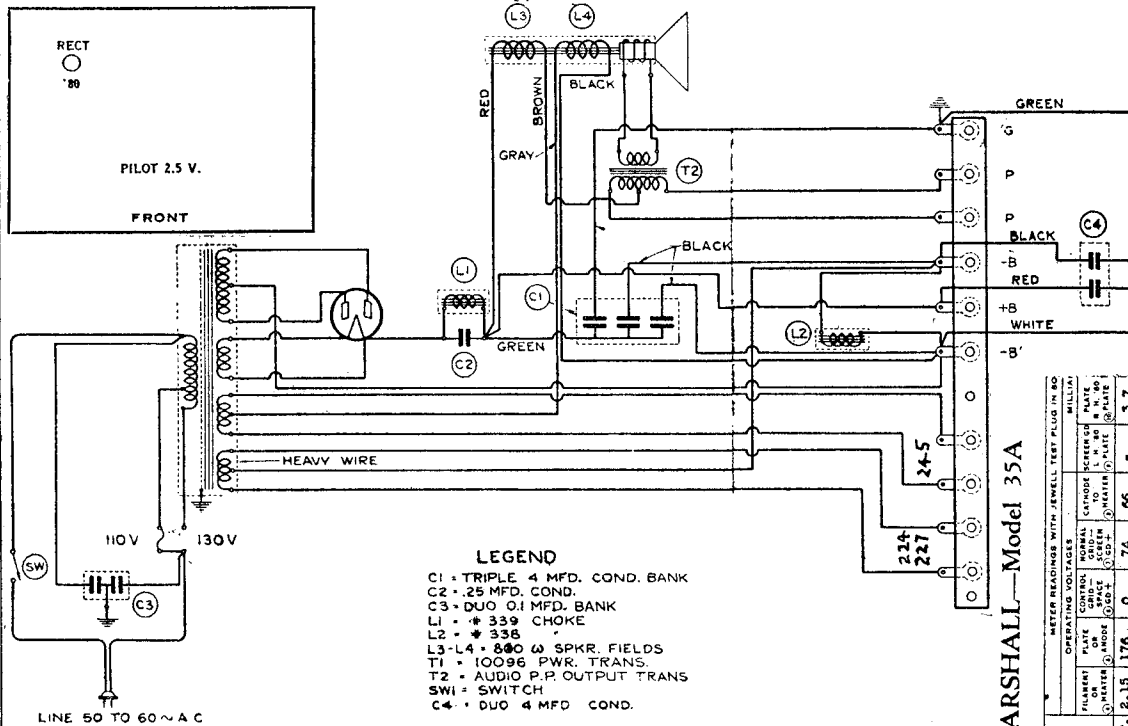


Schematic Diagram of 33-A Power Supply (25 cycle) for SILVER MARSHALL Radio for 34A and 35A receivers

SILVER-MARSHALL—Model 34A

TUBE NO. ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET			MILLIAMPERES	
			FLUORENT PLATE TO SCREEN (0-50)	CONTROL GRID TO SCREEN (0-50)	SCREEN GRID TO PLATE (0-50)		
1	224	1 R.F.	2.40	1.64	3.5	61	2.4
2	224	2 R.F.	2.40	1.65	3	64	2.4
3	224	Det.	2.44	1.08	13	13	.2
4	227	1 A.F.	2.48	1.10	2	9	4.4
5	245	2 A.F.	2.34	2.20	40	40	20
6	245	2 A.F.	2.32	2.20	40	40	21
7	280	Rect.	5.	-	-	-	26

Models 32A, 33A Power Supply



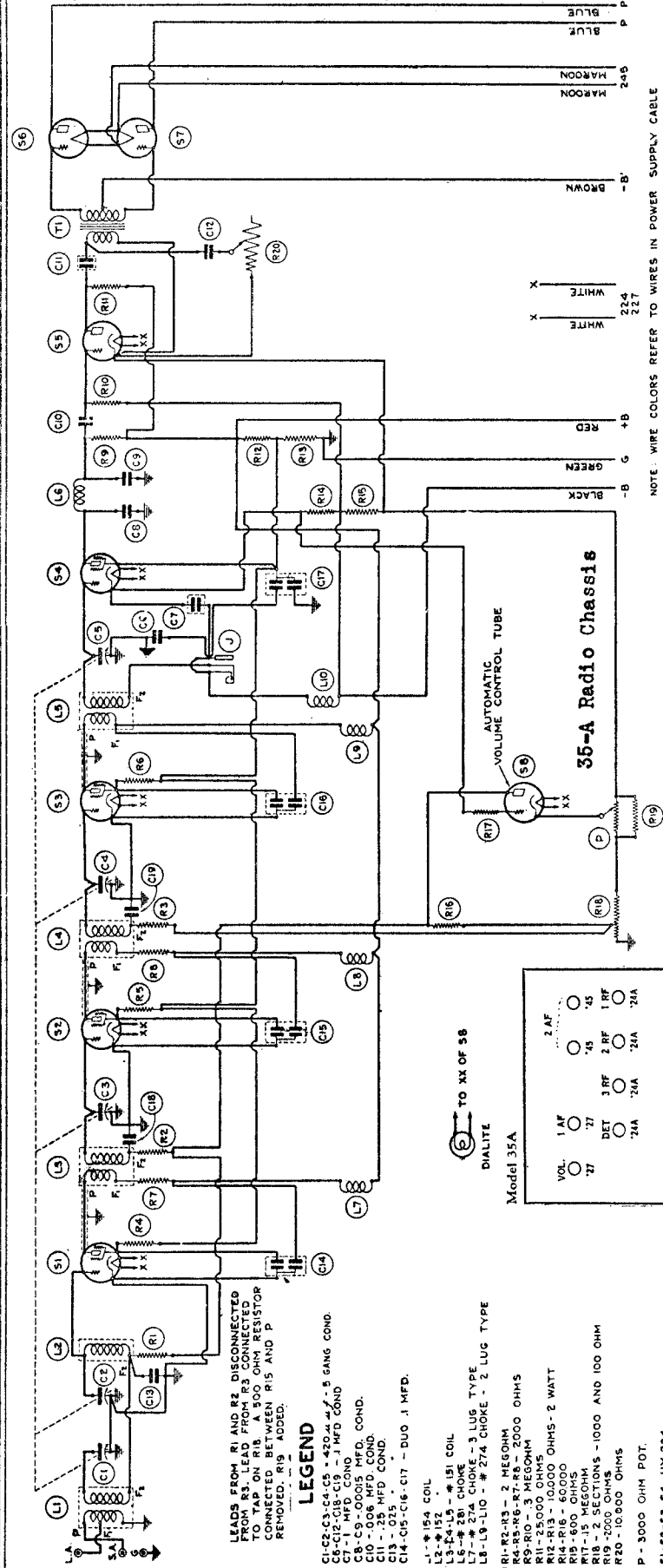
Schematic Diagram of 33-A Power Supply (60 cycle) for SILVER MARSHALL Radio for 34A and 35A receivers.

SILVER-MARSHALL—Model 35A

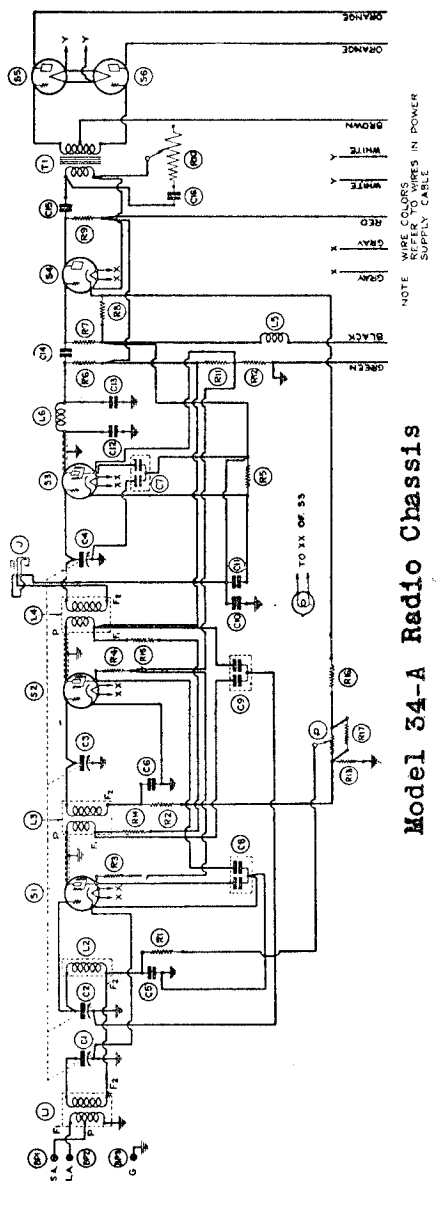
TUBE NO. ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET			MILLIAMPERES	
			FLUORENT PLATE TO SCREEN (0-50)	CONTROL GRID TO SCREEN (0-50)	SCREEN GRID TO PLATE (0-50)		
1	224	1 R.F.	2.15	1.76	0	74	66
2	224	2 R.F.	2.15	1.76	0	73	66
3	224	3 R.F.	2.17	1.68	3	73	60
4	224	Det.	2.19	1.18	11	40	11
5	245	1 A.F.	2.20	1.76	5	14	-
6	245	2 A.F.	2.30	2.16	40	40	-
7	245	V.Co.	2.50	2.16	40	40	-
8	227	Rect.	2.15	1.5	6	38	-
9	280	-	5.	-	-	-	28

MODEL 34-A
MODEL 35-A

SILVER - MARSHALL, INC.

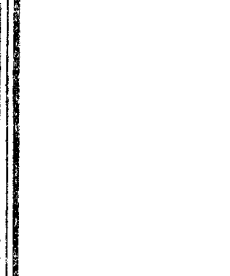


For Voltage Data See Index



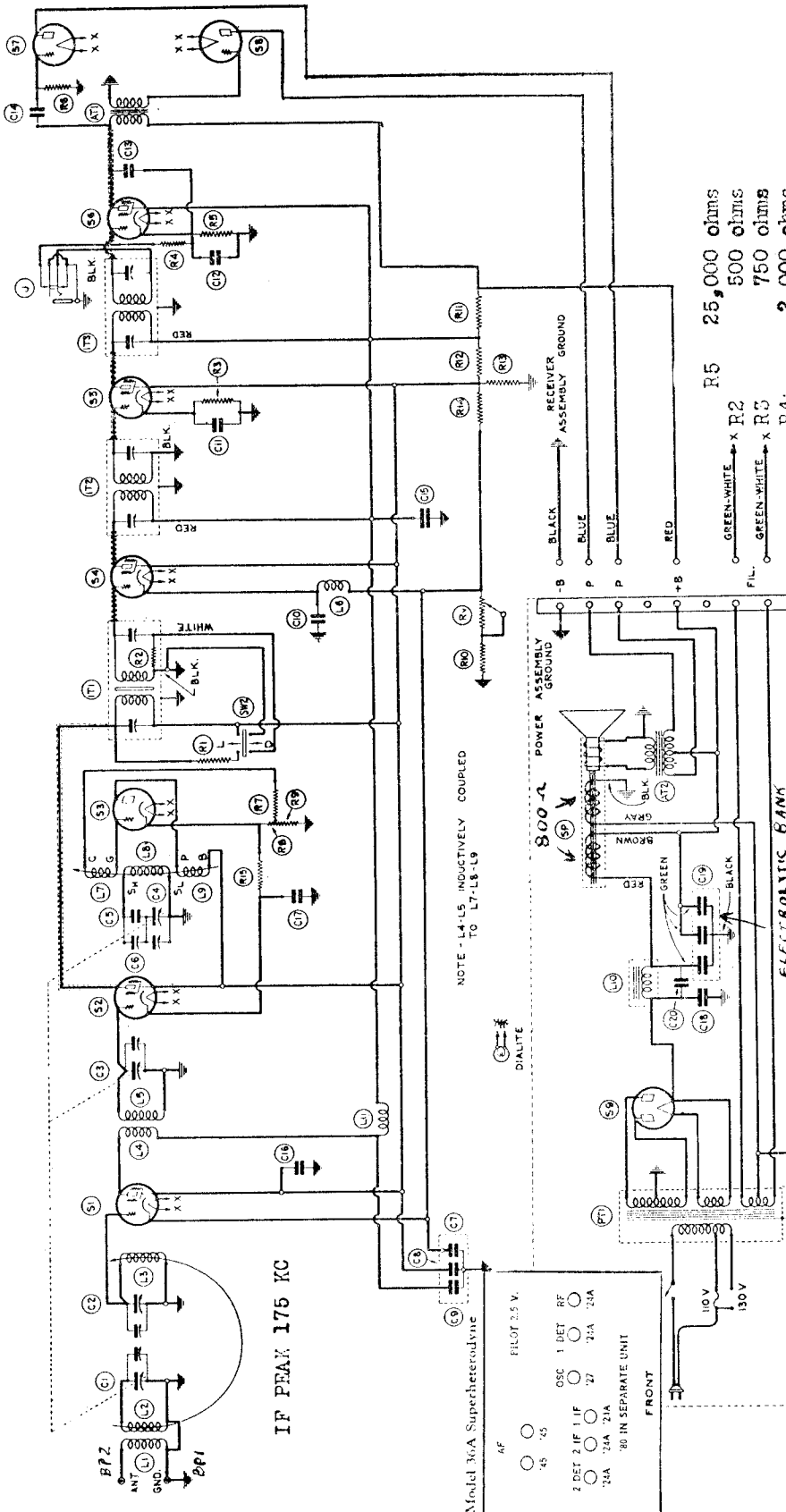
Model 34-A Radio Chassis

Model 35-A



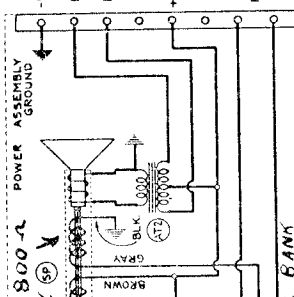
SILVER - MARSHALL, INC.

MODEL 36-A
Schematic, Voltage



NOTE - L4-L5 INDUCTIVELY COUPLED TO L7-L8-L9

DIALITE

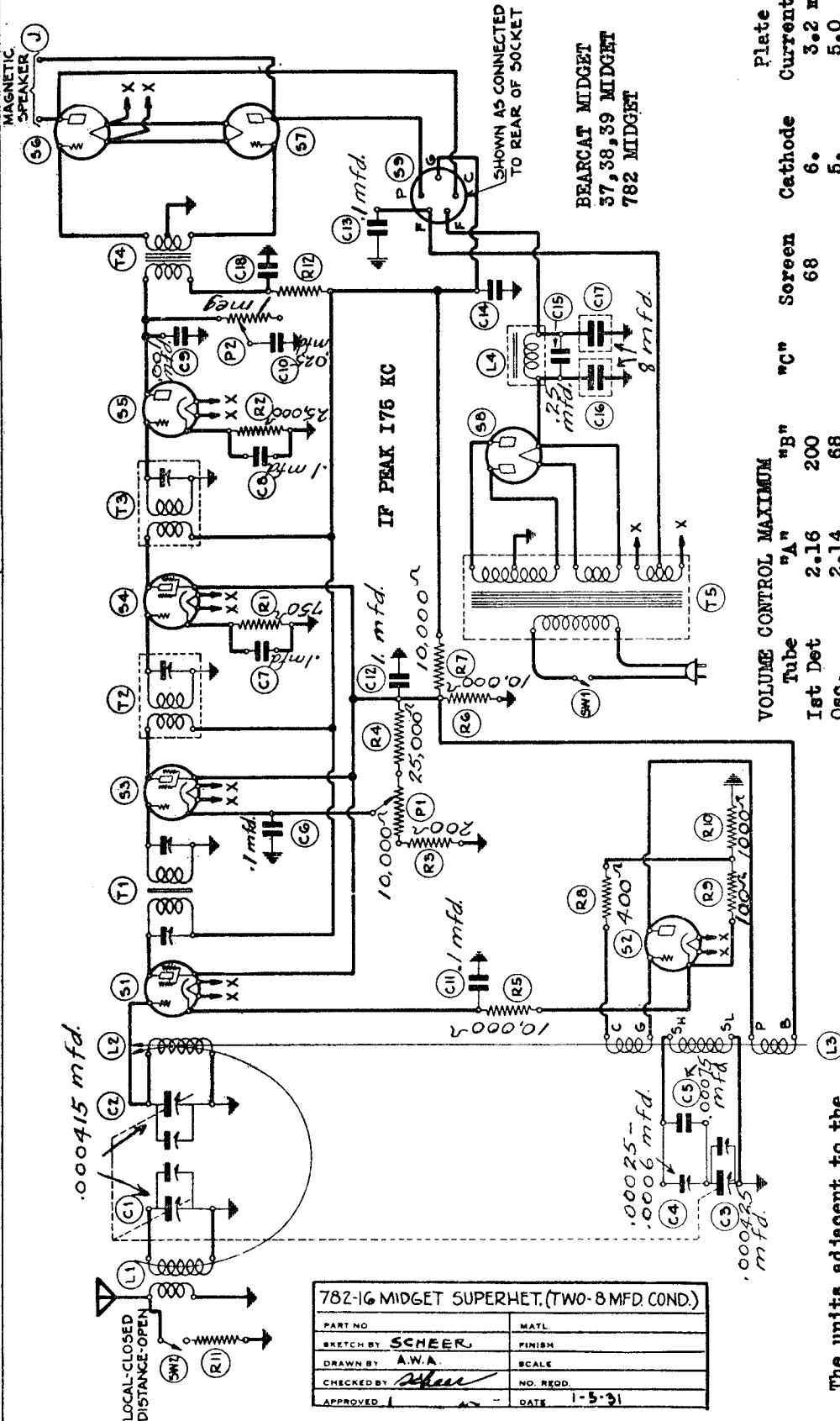


Component	Value	Notes			
C7, 8, 9	Triple .1 bank				
C10, 14, 16, 20	.25 mfd				
C11, 17, 21	.1 mfd				
C12, 15, 18	1. mfd				
C13	.001				
C19	Triple 4. mfd (electrolytic)				
Fil.V.	Plt.V. Grid.V. S.Grid.V. Cath.V. Plt.Crnt				
2.27	162	85	7.	7.	4. mA
2.27	76*	80	37.5	3.	
2.27	82		37.5	11.	
2.27	160	110	42.5	4.	
2.27	160	110	45.	4.	
2.27	245	162	7.	4.	
2.4	255				
2.4	255				
R5	25,000 ohms				
R2	500 ohms				
R3	750 ohms				
R4	2,000 ohms				
R6	300,000 ohms				
R7	400 ohms				
R8, R9	100 ohms, 1000 ohms (one strip)				
R10	375 ohms				
RV	3000 ohms				
R11	3500 ohms				
R12	4000 ohms				
R13, R15	10000 ohms				
R14	20000 ohms				

* Misleading, due to current drawn by test meter.

MODEL Bearcat Midget
 MODEL 37, 38, 39 Midget
 MODEL 782 Midget

SILVER - MARSHALL, INC.



VOLUME CONTROL MAXIMUM			
Tube	"A"	"B"	"C"
Ist Det	2.16	200	68
Osc.	2.14	68	
Ist IF	2.18	200	68
2nd IF	2.19	200	68
2nd Det	2.20	200	
AF PP	2.25	245	47
AF PP	2.25	245	47
Rect.	5.1	400 Volts A.C. per anode	

Plate Current	Cathode
3.2 ma	6.
5.0	5.
5.7	1.6
5.6	2.3
0.8	20.
29.0	
29.0	

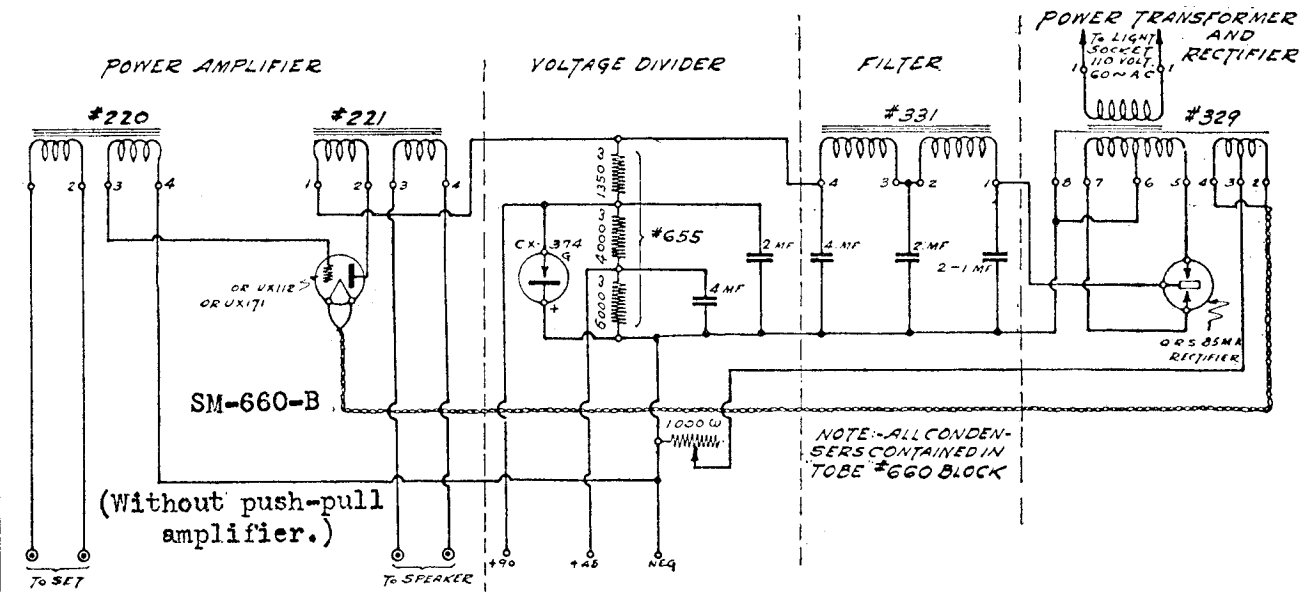
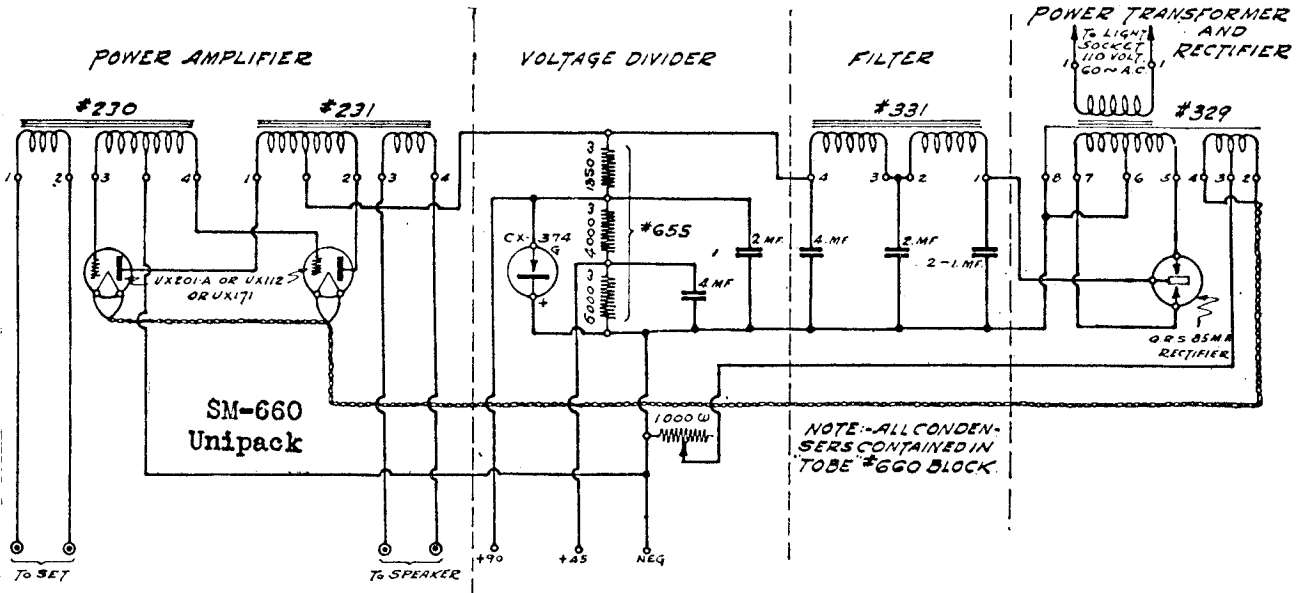
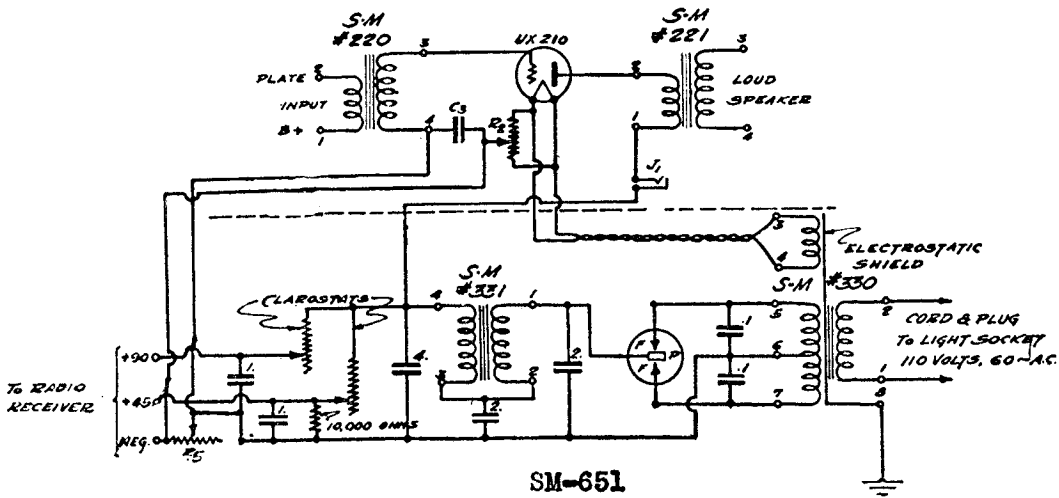
782-1G MIDGET SUPERHET. (TWO-8 MFD COND.)

PART NO.	MATL.
SKETCH BY SCHEER	FINISH
DRAWN BY A.W.A.	SCALE
CHECKED BY [Signature]	NO. REED.
APPROVED [Signature]	DATE 1-5-31

The units adjacent to the shielded IF and 2nd det. tubes are the IF transformers, with the 1st det. next to the 1st IF tube. The tuning condenser section most distant from the dial tunes the osc.

SILVER - MARSHALL, INC.

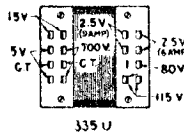
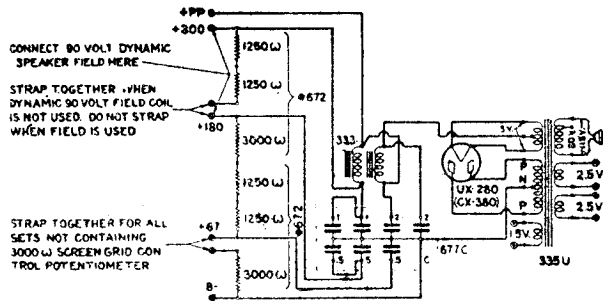
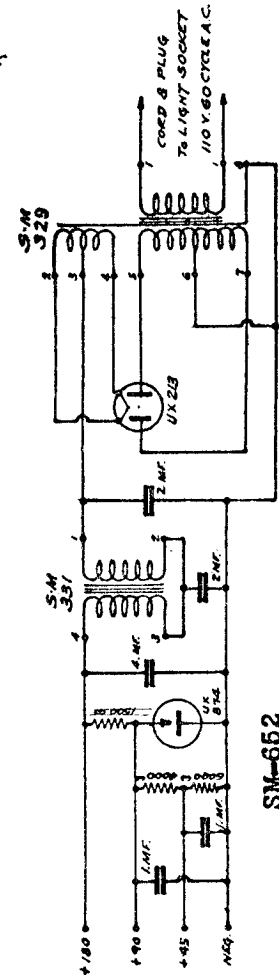
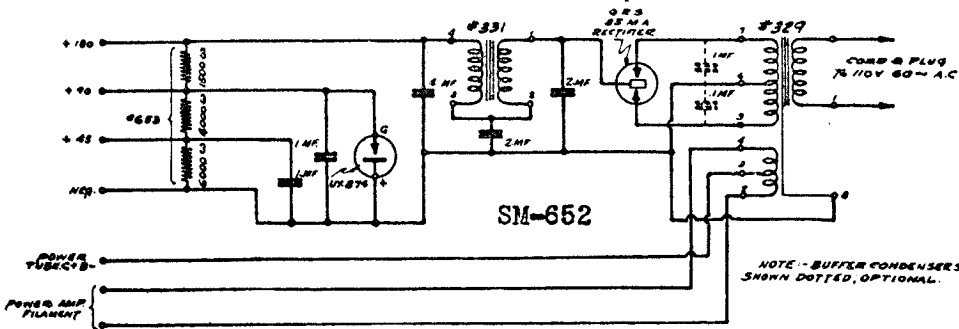
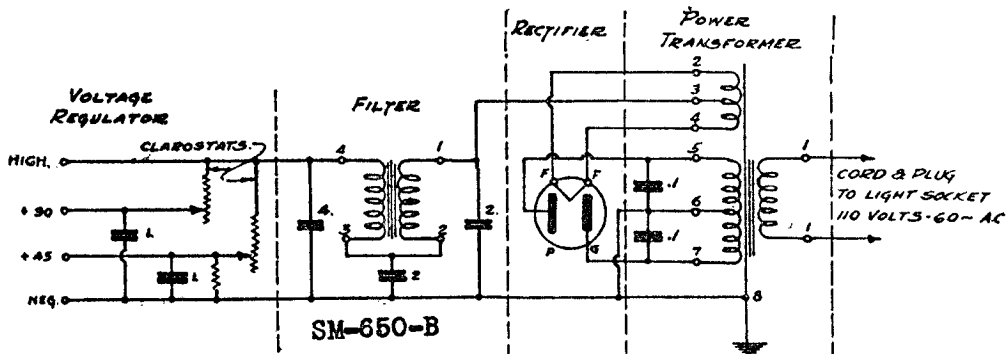
MODEL 651
 MODEL 660 Unipack
 MODEL 660-B



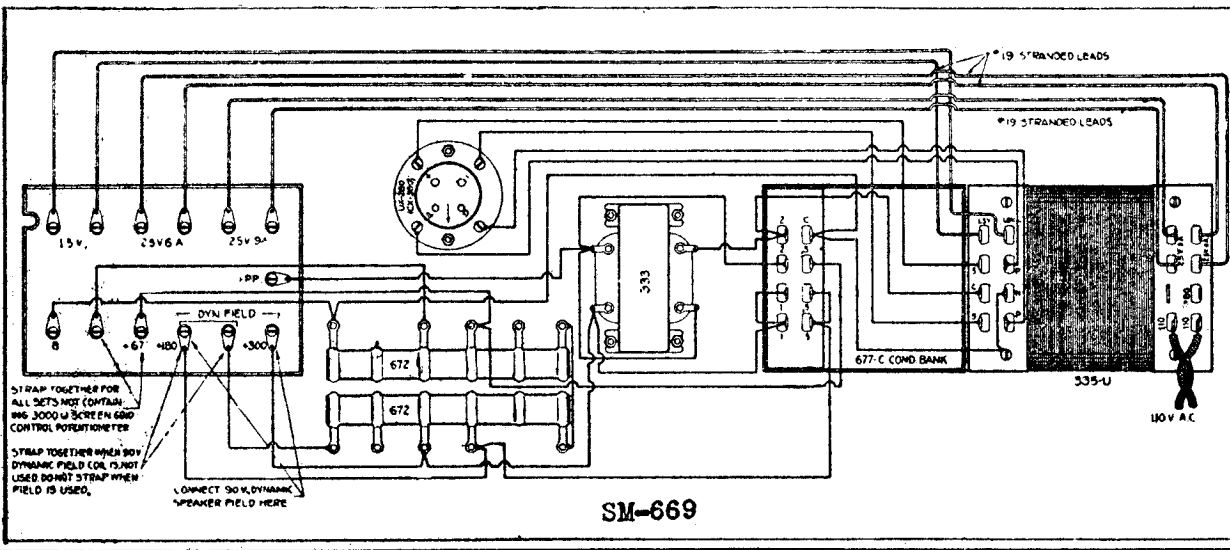
(Without push-pull amplifier.)

MODEL 650-B
 MODEL 652
 MODEL 669

SILVER - MARSHALL, INC.

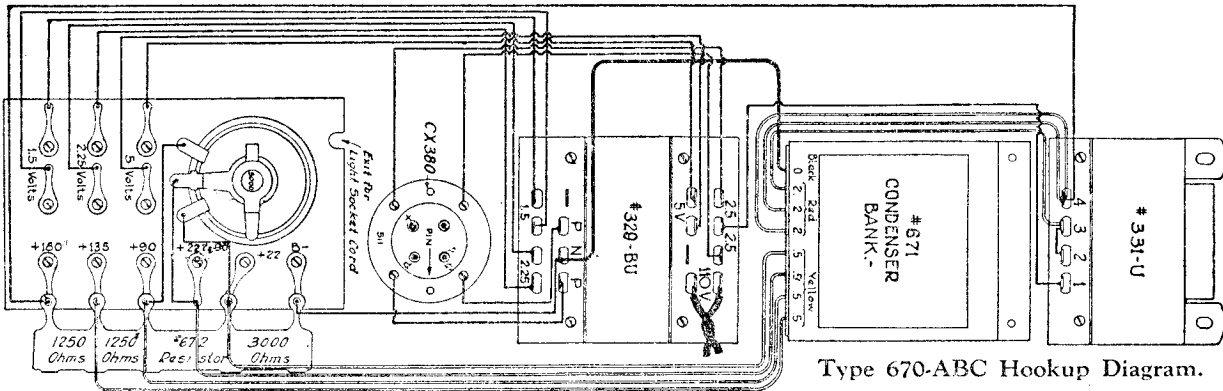


SM-669

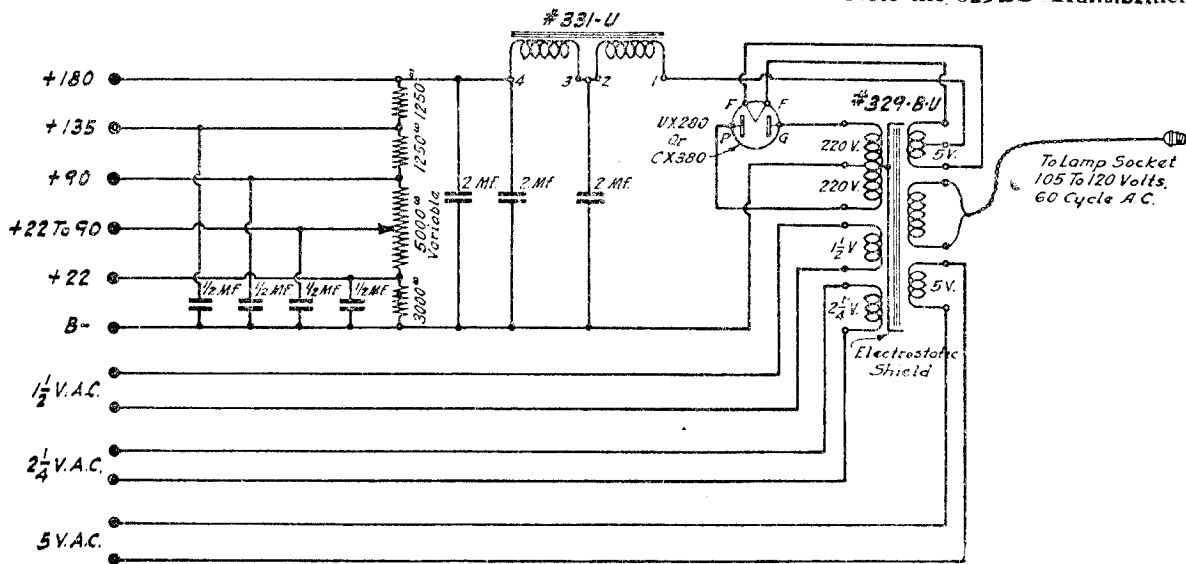


SILVER - MARSHALL, INC.

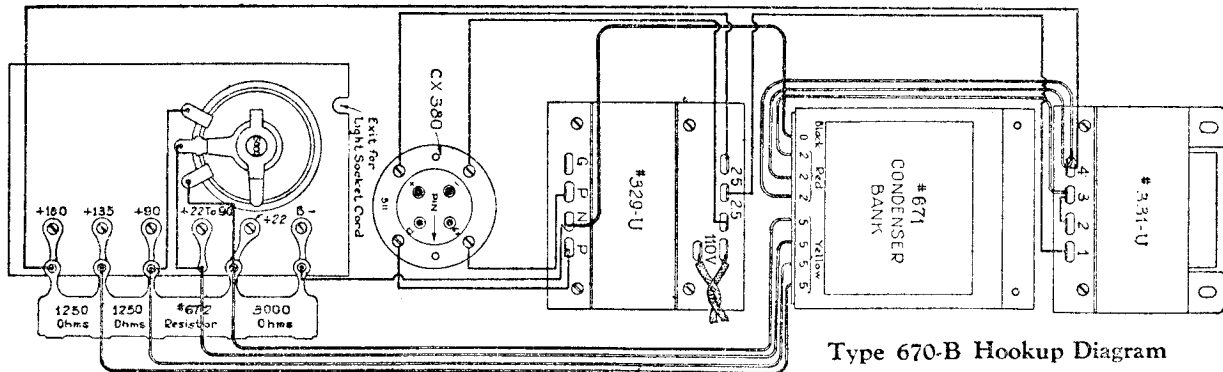
MODEL 670-ABC
 MODEL 670-B
 Schematic, Chassis



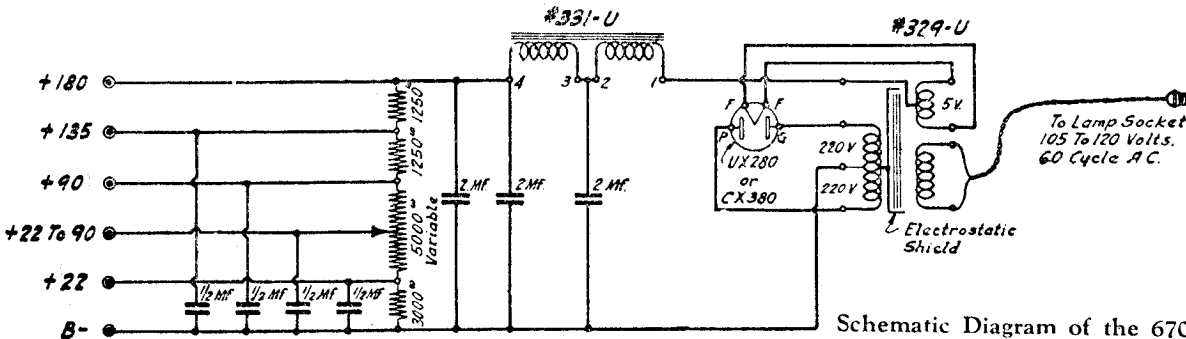
Type 670-ABC Hookup Diagram.
 Note the 329BU Transformer.



Schematic Diagram of the 670-ABC



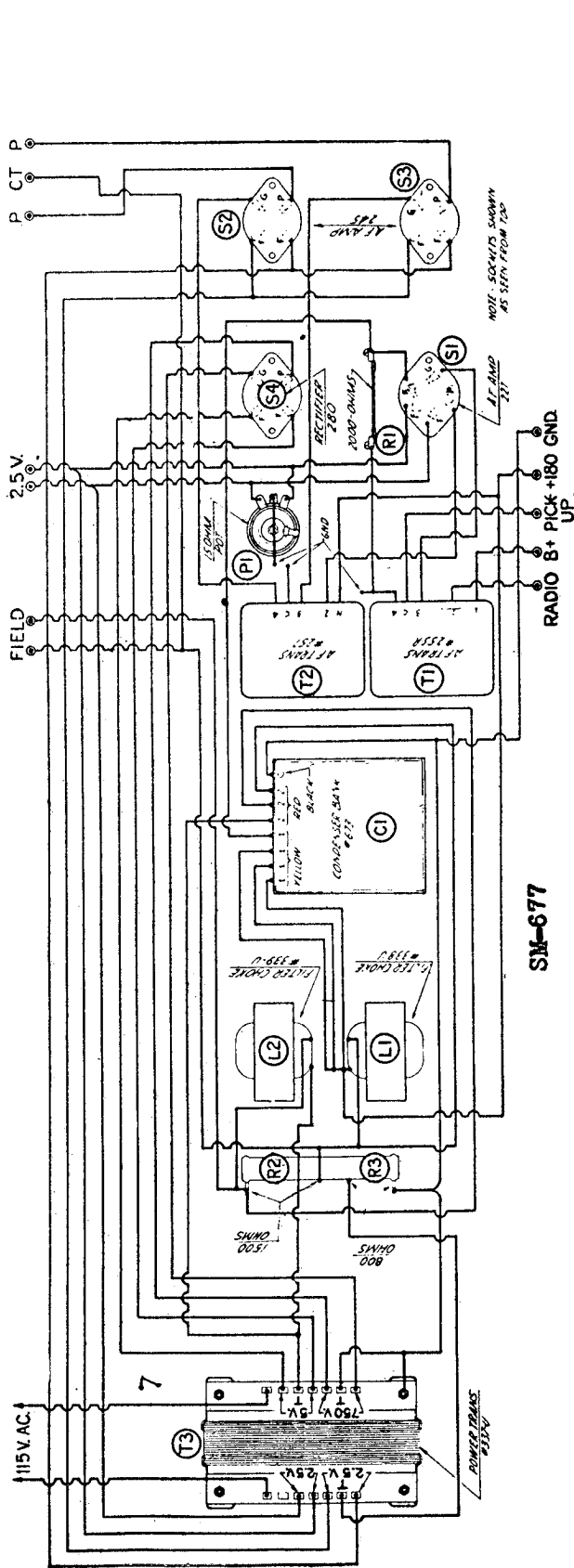
Type 670-B Hookup Diagram



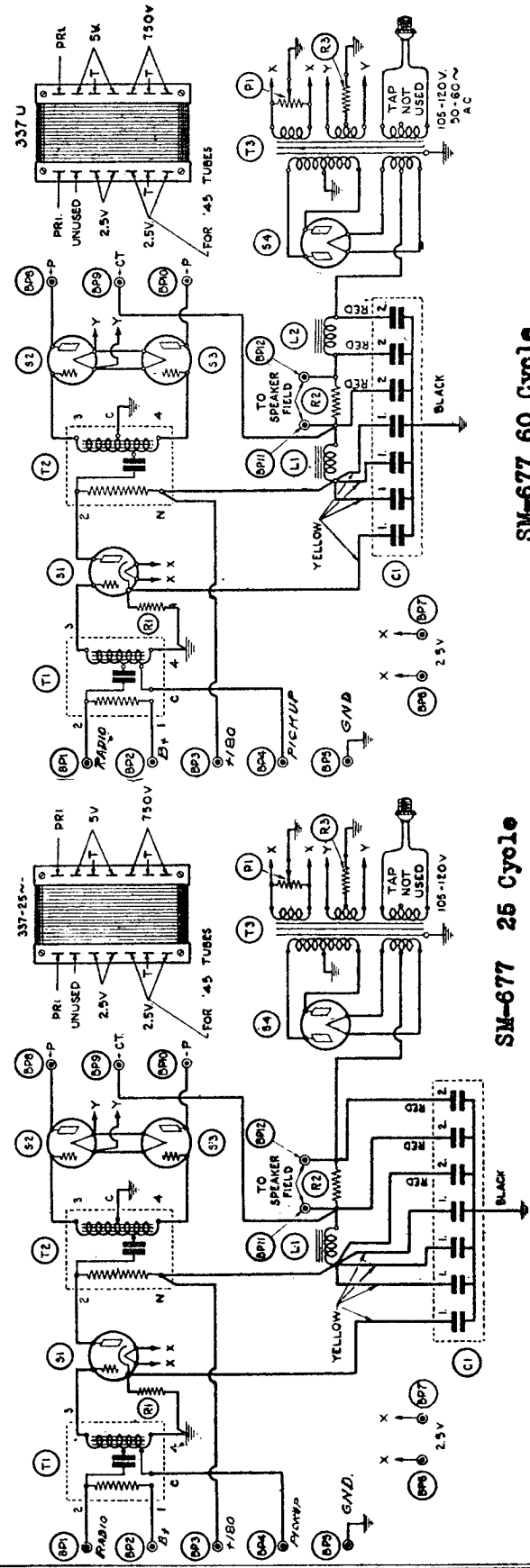
Schematic Diagram of the 670-B

MODEL 677
25 and 60 cycles
Schematic, Chassis

SILVER - MARSHALL, INC.



SM-677

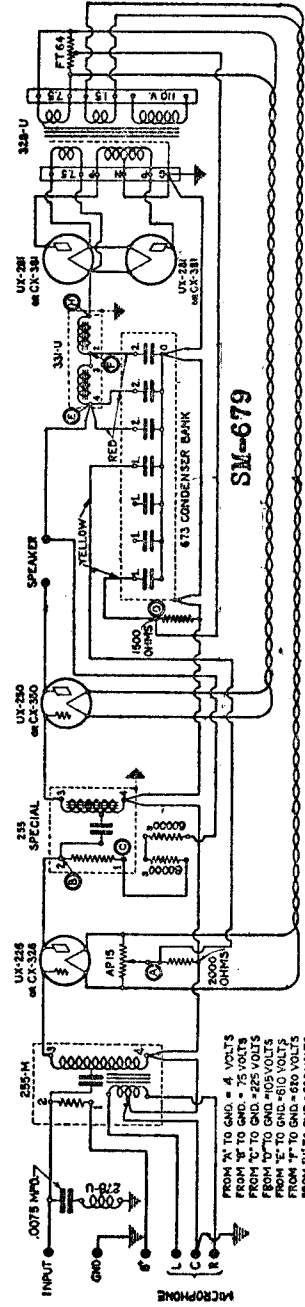
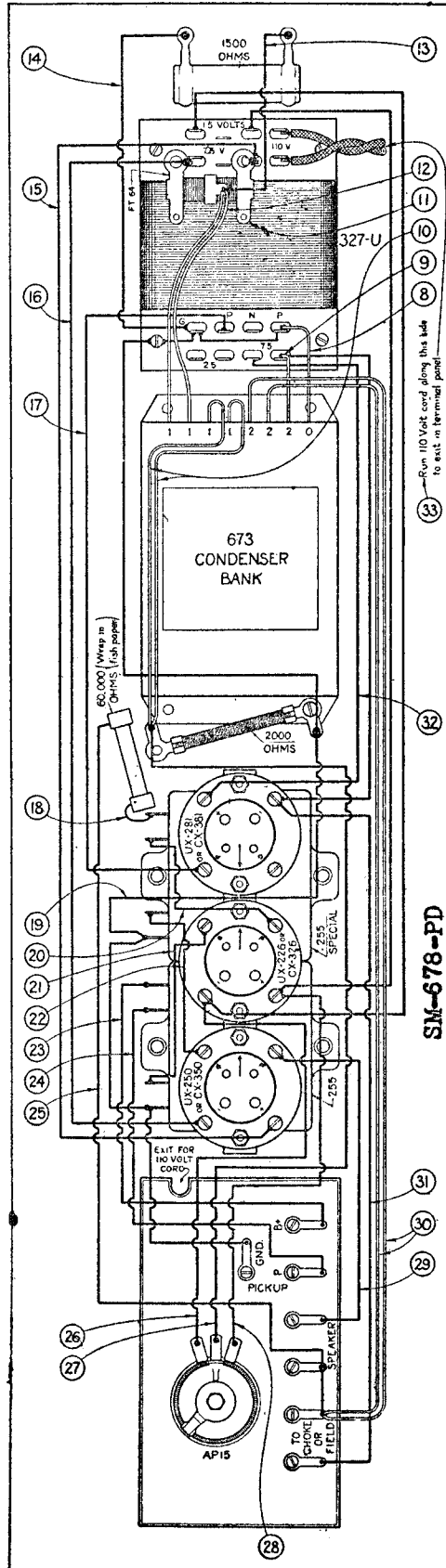
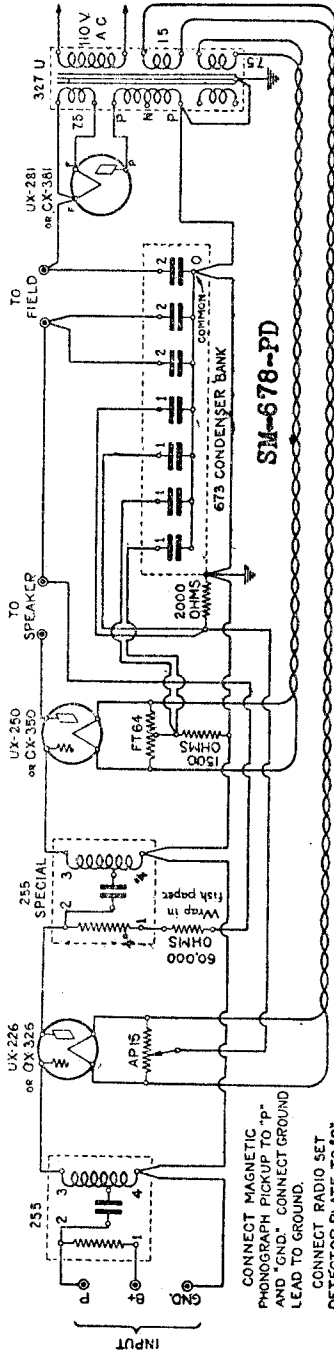


SM-677 25 Cycle

SM-677 60 Cycle

SILVER - MARSHALL, INC.

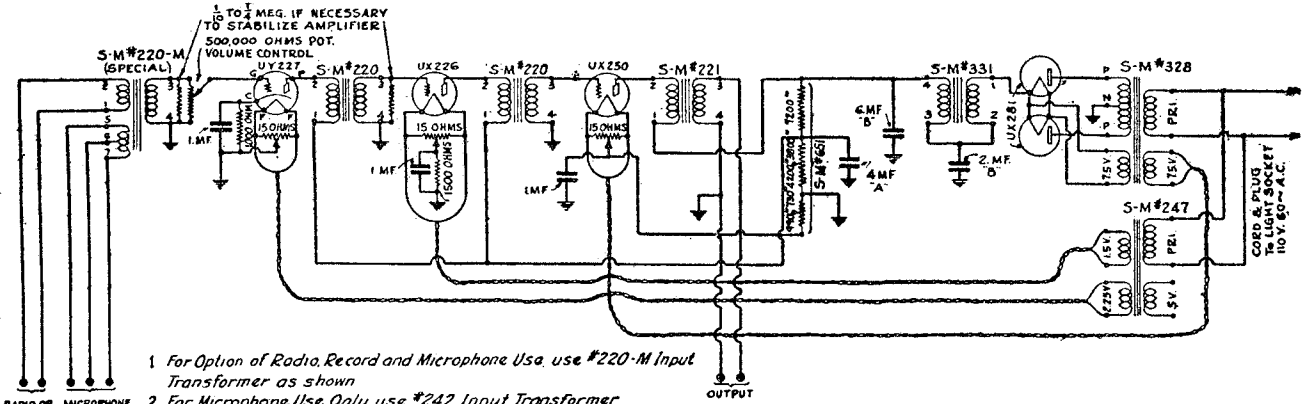
MODEL 678-PD
Schematic, Chassis
MODEL 679



Schematic Diagram of 679 Amplifier

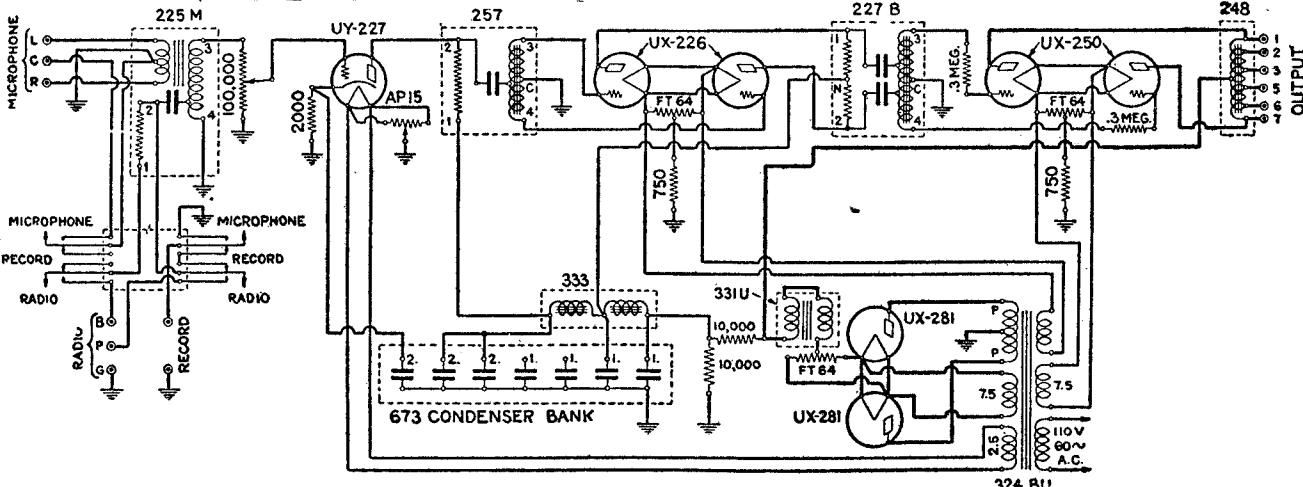
SILVER - MARSHALL, INC.

MODEL 685
 MODEL 690
 MODEL 692



- 1 For Option of Radio, Record and Microphone Use, use #220-M Input Transformer as shown
- 2 For Microphone Use Only, use #242 Input Transformer
- 3 For Radio Use Only, use #220 Input Transformer
- 4 For Record-Pickup Use Only, Omit Input Transformer and Connect Record-Pickup in place of Input Transformer Secondary directly to Ends of 500,000 Ohm Volume-Control Potentiometer
- 5 When Using Microphone (Single or Double-Button Type Optional) keep well away from Loud Speakers to avoid "Singing"
- 6 Use 3 to 4 1/2 Volts of Dry Battery for Microphone
- 7 Group all Loud Speakers Used into Cluster, to avoid "Echo Effect"

Model 685

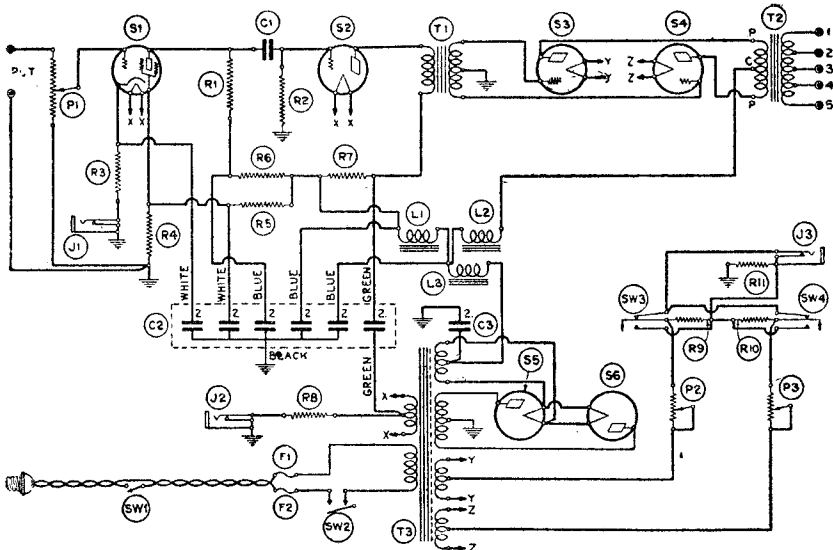


Schematic Diagram of the S-M 690 Amplifier

324 BU

Model 692

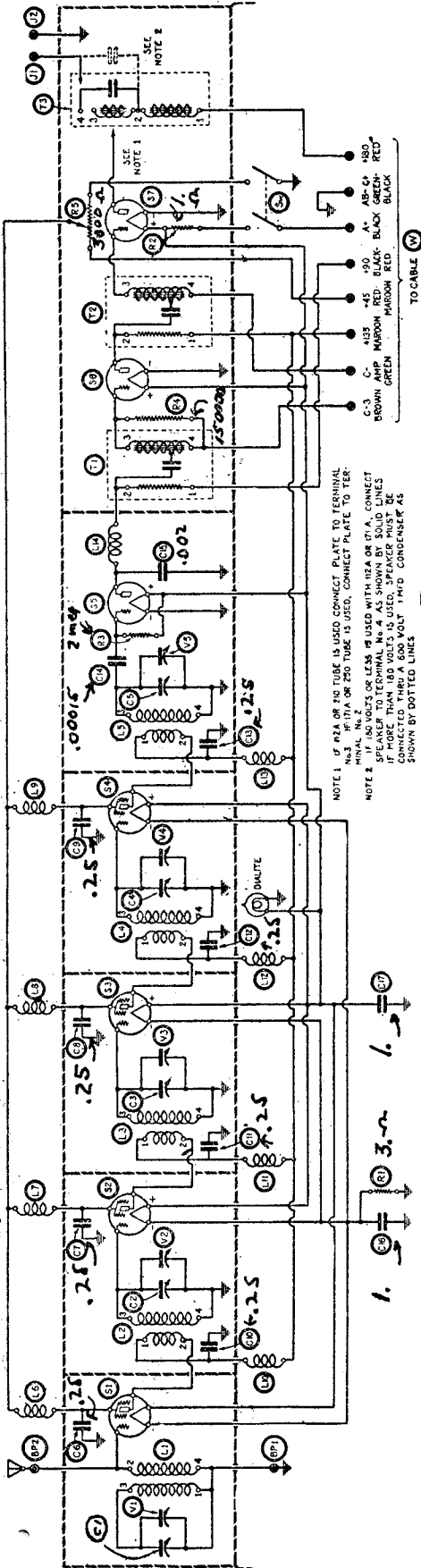
- P1 No. 4491—Potentiometer
- P2 } No. 4490—Potentiometer
- P3 }
- R1 No. 4772—Resistor
- R2 No. 4700—Resistor
- R3 No. 4730—Resistor
- R4 No. 4771—Resistor
- R5 No. 4685—Resistor
- R6 No. 4698—Resistor
- R7 No. 4726—Resistor
- R8 No. 4689—Resistor
- R9 } No. 4723—Resistor
- R10 }
- R11 No. 4776—Resistor



MODEL 710

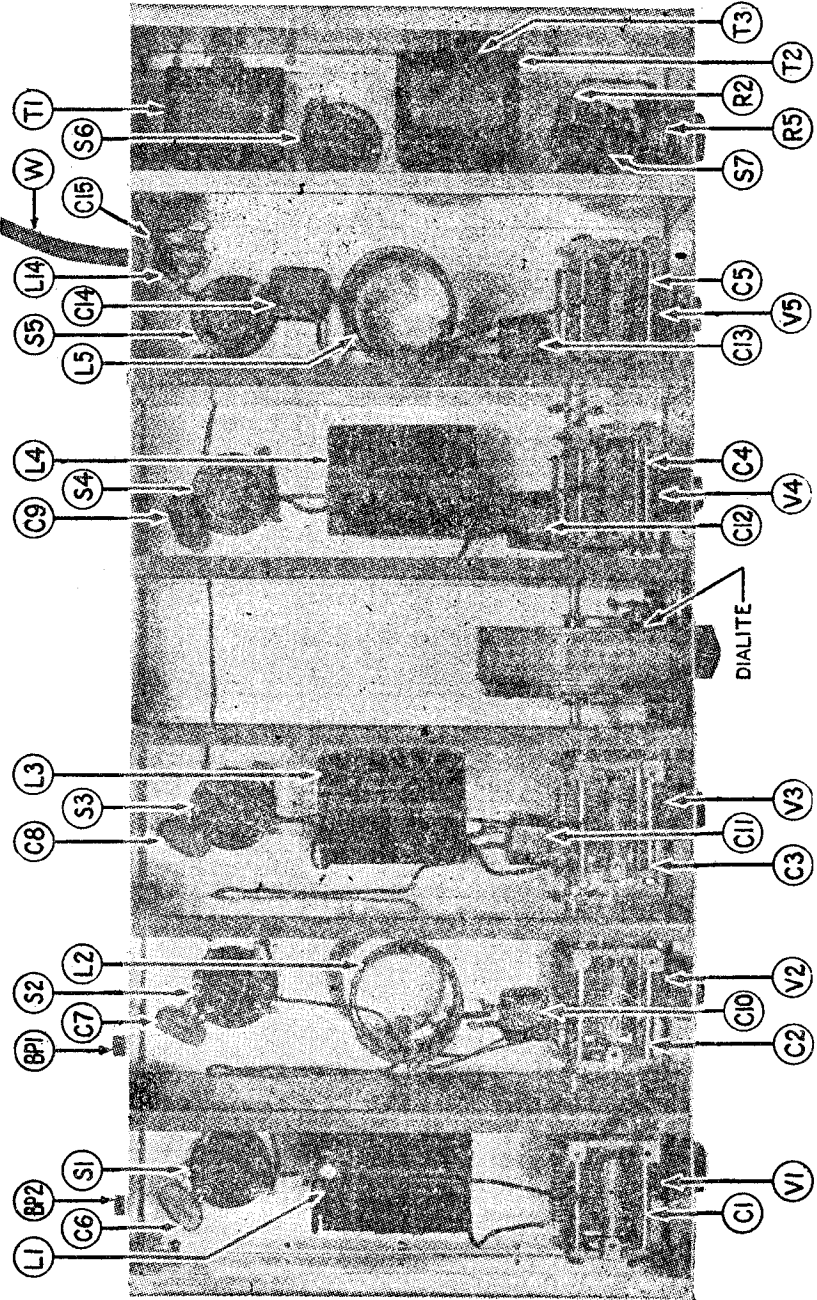
Sargent-Raymond Seven
Schematic, Chassis

SILVER - MARSHALL, INC.



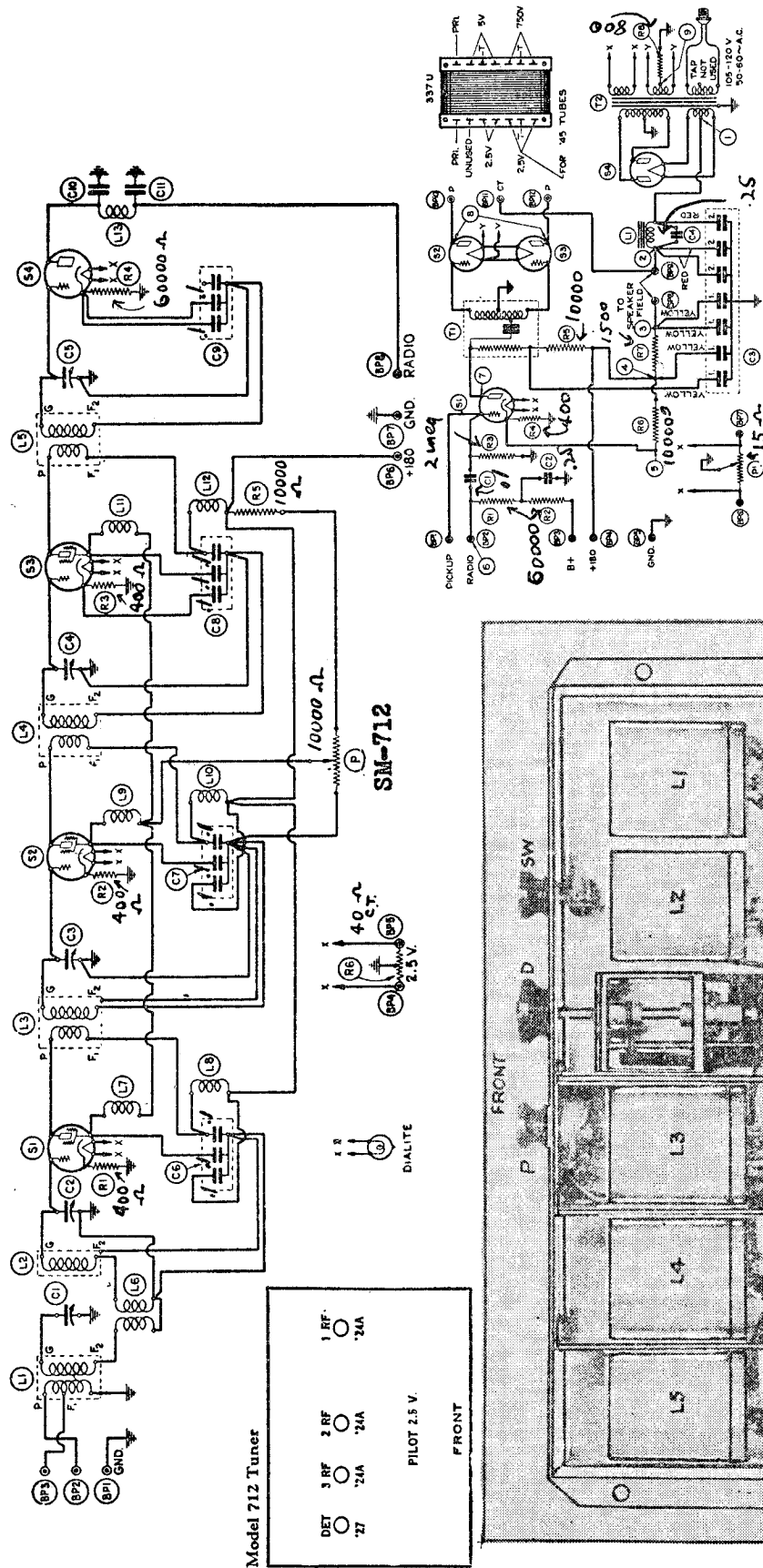
NOTE 1. IF R1A OR R1B NO TUBE IS USED, CONNECT PLATE TO TERMINAL No. 3. IF T1A OR T2D TUBE IS USED, CONNECT PLATE TO TERMINAL No. 2. IF C15 OR L14 IS USED WITH U2A OR U1A, CONNECT SPEAKER TO TERMINAL No. 4 AS SHOWN BY SOLID LINES. IF MORE THAN 180 VOLTS IS USED, SPEAKER MUST BE CONNECTED THRU A 600 VOLT 1 MFD. CONDENSER AS SHOWN BY DOTTED LINES.

- L1 141 antenna coil
- L2-L3-L4-L5 142 RF transformer coils
- C1-C2-C3-C4- 320R variable condensers, .00035 mfd.
- C5
- V1-V2-V3-V4- 340 midget condensers, .000025 mfd.
- V5
- L6 L7-L8-L9- 275 RF chokes
- L10-L11-
- L12-L13-
- L14
- S1-S2-S3-S4- 511 tube sockets
- S5-S6-S7
- T1 255 first stage AF transformer
- T2 256 second stage AF transformer
- T3 251 output transformer
- W 708 ten lead battery cable



SILVER - MARSHALL, INC.

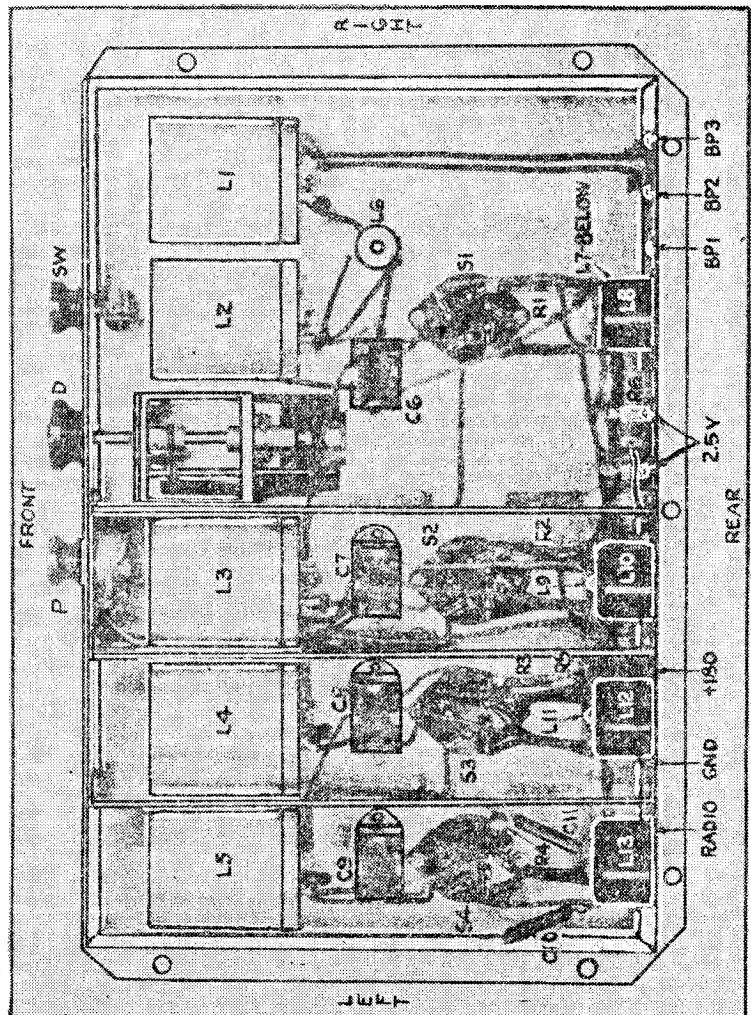
MODEL 712
Schematic
Chassis
MODEL 677-B



Schematic of 677B Amplifier
used with 712 AC Tuner

Representative voltages when
677B is connected to 712 Tuner
with on-off volume control on
full

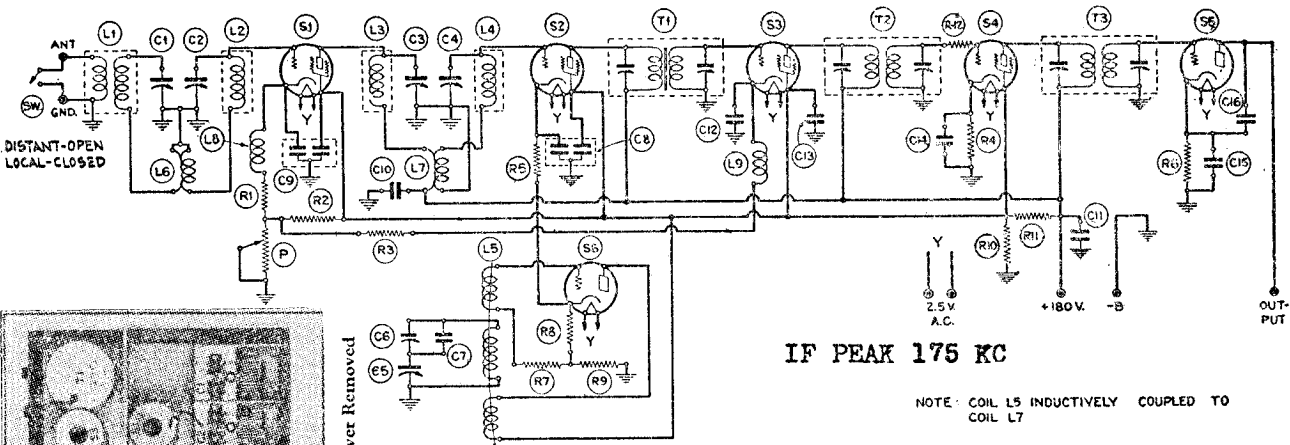
From (1)	to Ground	-	320
(2)	"	"	310
(3)	"	"	230
(4)	"	"	160
(5)	"	"	8
(6)	"	"	110
(7)	"	"	100
(8)	"	"	300
(9)	"	"	50



- Model 712 Tuner
- DET 3 RF 2A
 - '27 2A
 - 1 RF 2A
 - '2A 2A
- PILOT 2.5 V.
- FRONT

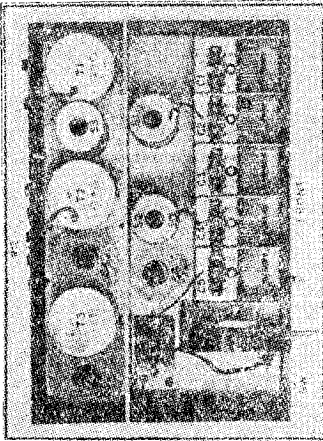
MODEL 714
Schematic
Chassis, Voltage

SILVER - MARSHALL, INC.

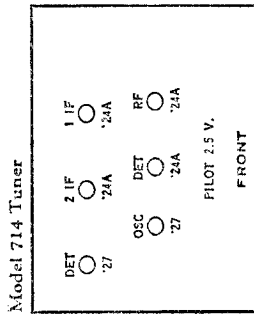


IF PEAK 175 KC

NOTE: COIL L5 INDUCTIVELY COUPLED TO COIL L7



Top View of Tuner with Cover Removed

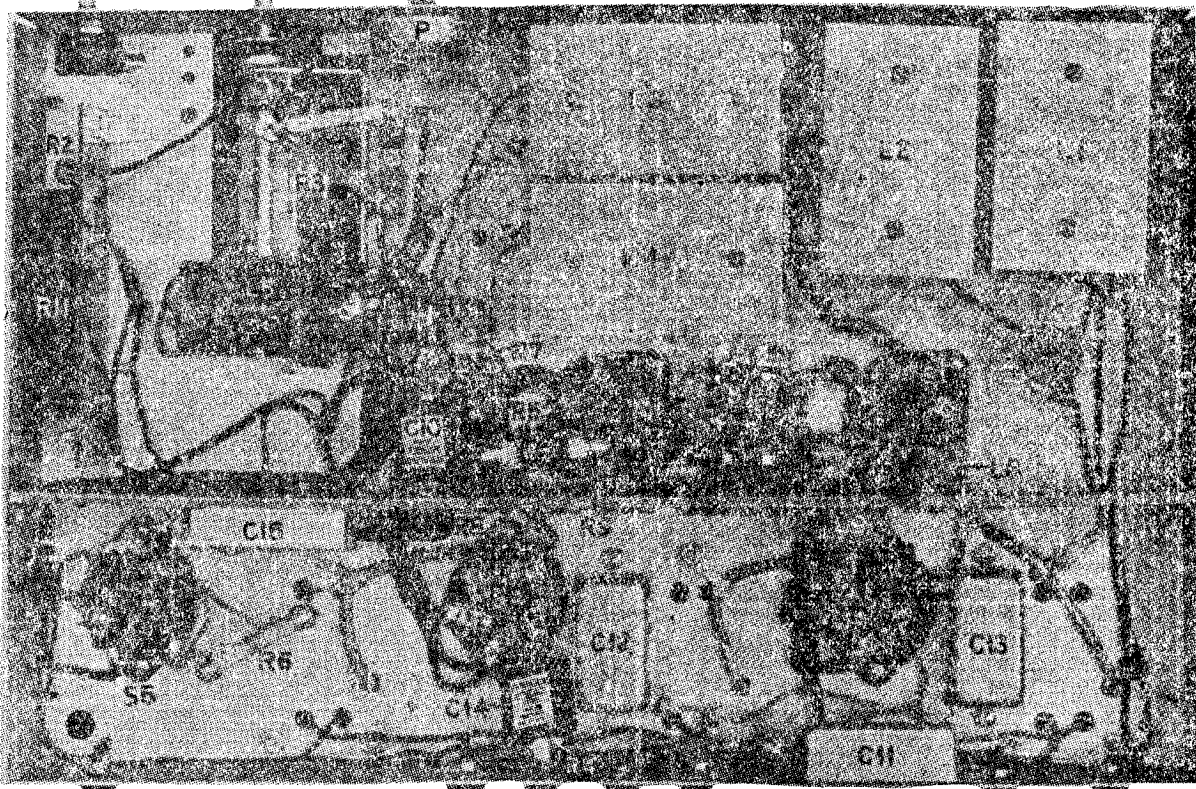


VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current. MA
R.F.	(S1)	24	2.30	160	80	5
1st Det.	(S2)	24	2.27	160	80	7
Oscillator	(S3)	27	2.25	80	80	7
1st I.F.	(S4)	24	2.31	160	80	5
2nd I.F.	(S5)	24	2.25	160	80	3
2nd Det.	(S6)	27	2.31	128	17	17

*Misleading

FRONT



OUTPUT

180V

+B

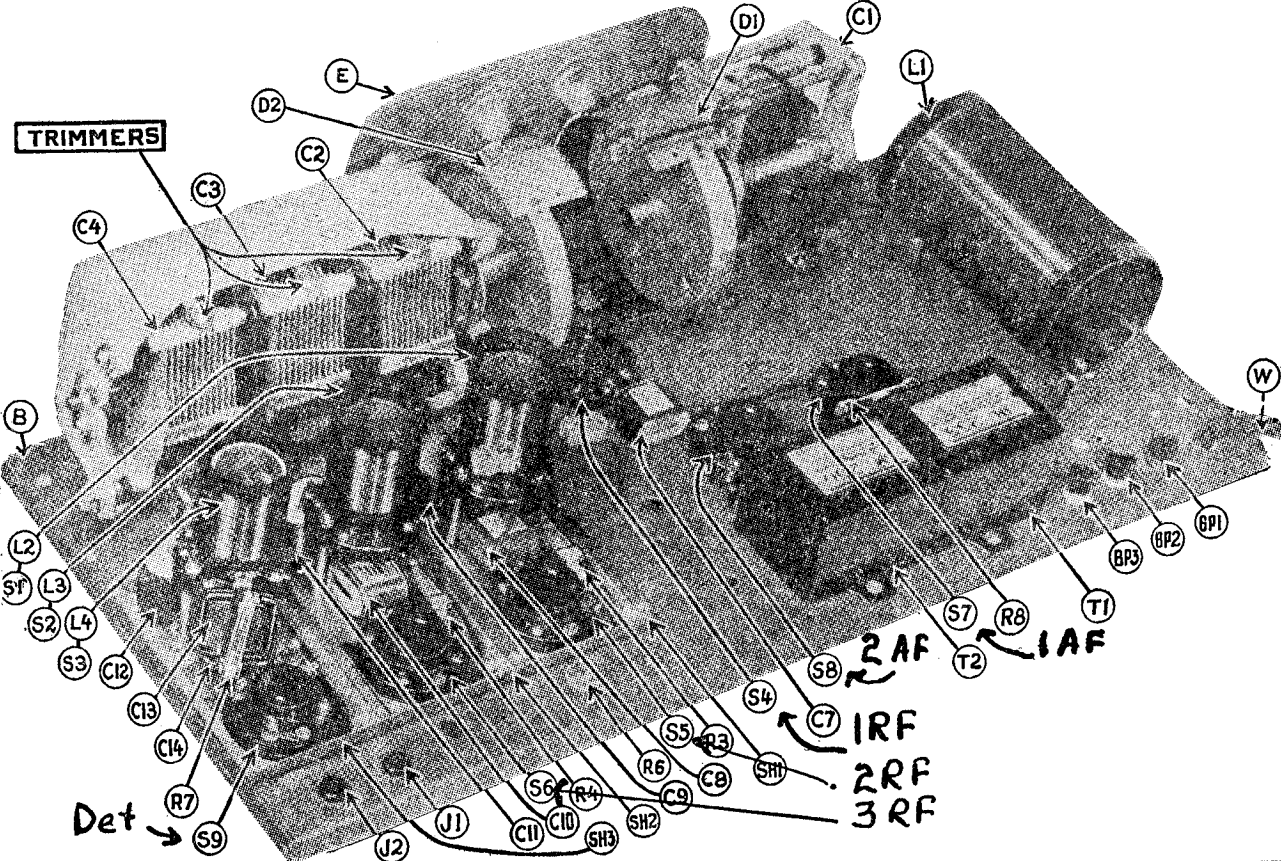
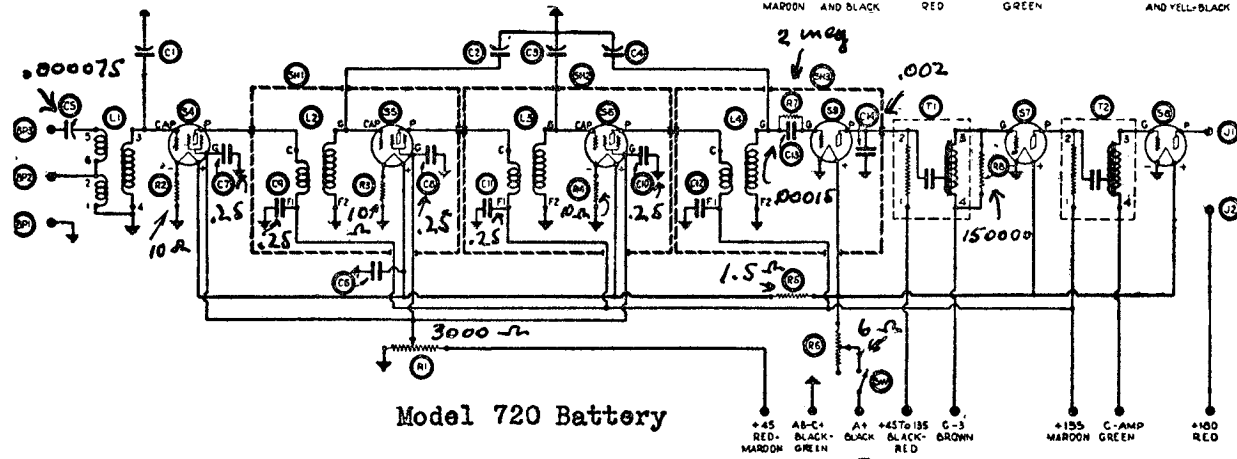
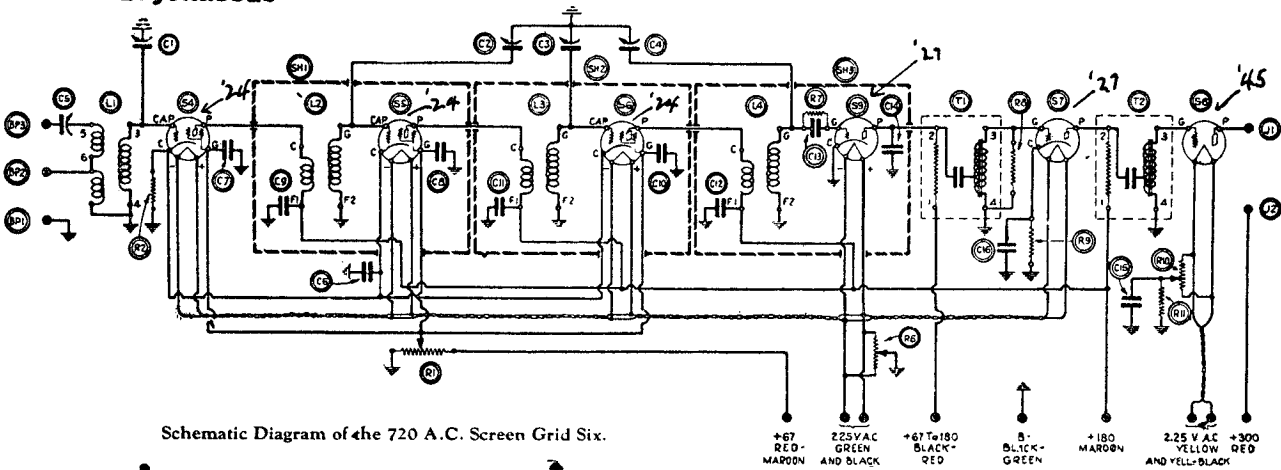
2.5V

GND

ANT

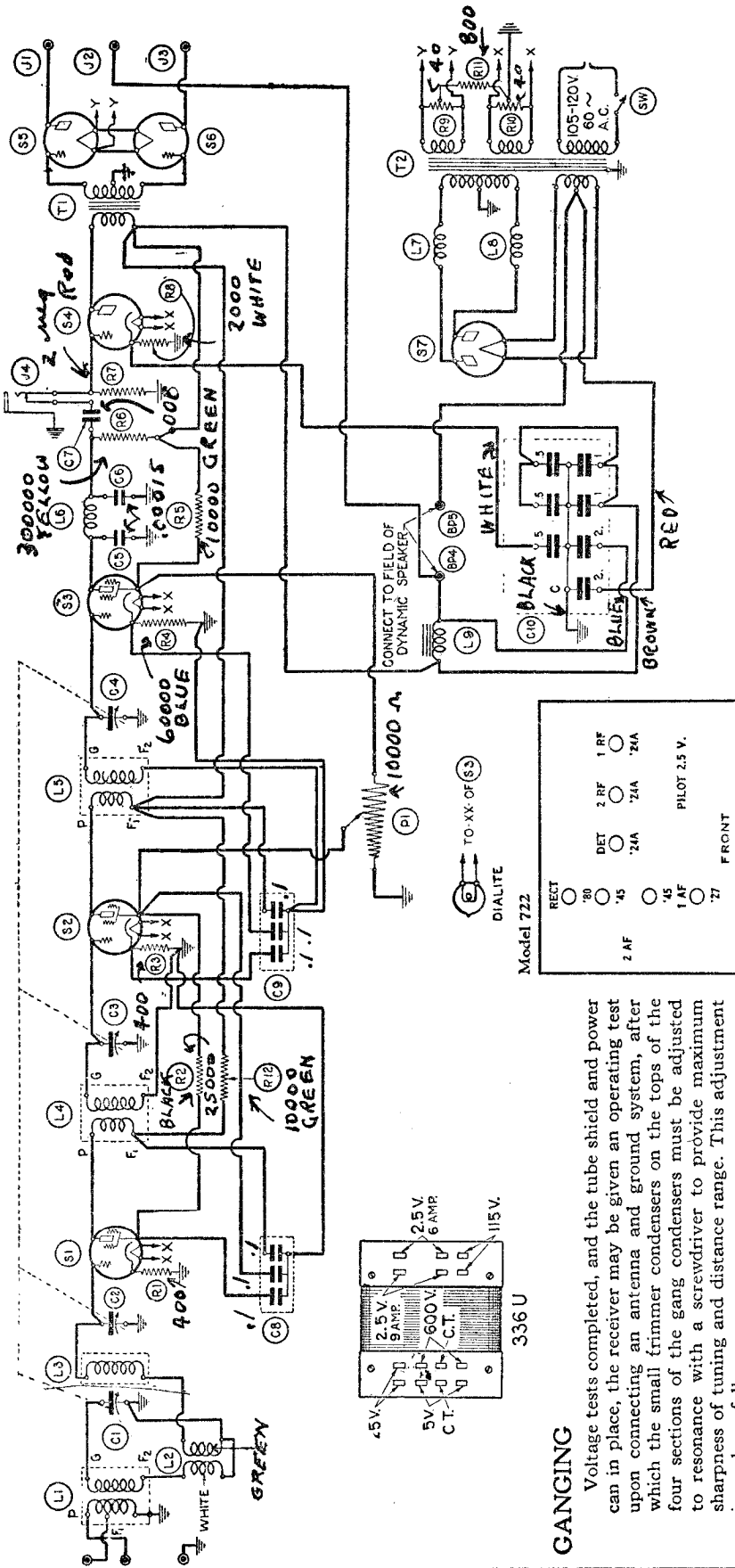
MODEL 720 AC
MODEL 720 Battery
Schematic, Chassis

SILVER - MARSHALL, INC.



SILVER - MARSHALL, INC.

MODEL 722
Schematic
Voltage, Data



GANGING

Voltage tests completed, and the tube shield and power can in place, the receiver may be given an operating test upon connecting an antenna and ground system, after which the small trimmer condensers on the tops of the four sections of the gang condensers must be adjusted to resonance with a screwdriver to provide maximum sharpness of tuning and distance range. This adjustment is made as follows:

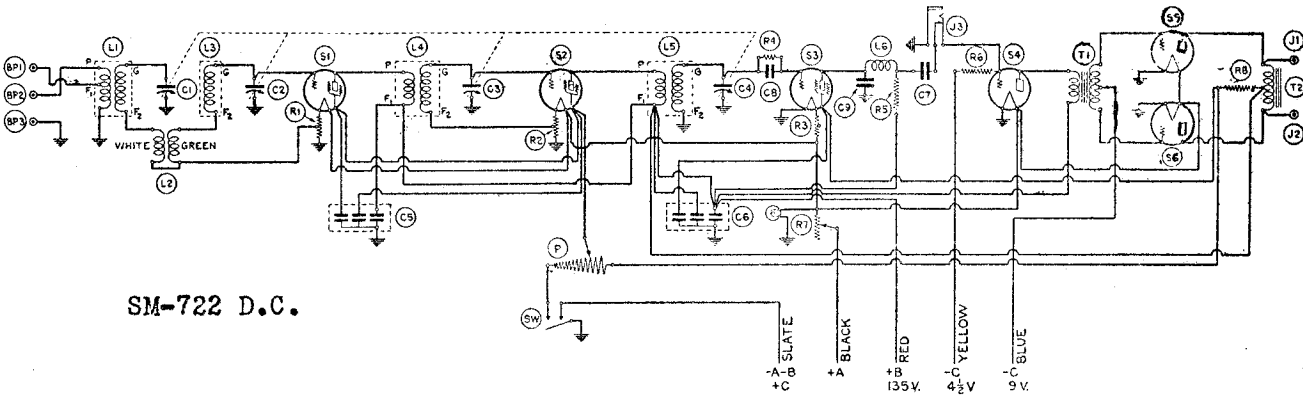
1. Unscrew trimmer condensers **C2, C3, C4** two full turns. The three holes in the cover of the tube shield SH should be directly over the trimmer screws.
2. Connect small antenna to binding post BP1 (or artificially shorten a long one in order to produce a rather weak signal when volume control is turned full on or nearly full on).
3. Tune in a station at 230 to 250 meters.
4. Adjust trimmer C-4 for loudest signal.
5. Adjust trimmer C3 for loudest signal.
6. Adjust trimmer C2 for loudest signal.
7. Adjust trimmer C1 for loudest signal.
8. Re-tune receiver to a station at between 450 and 550 meters.
9. Re-check adjustment of trimmers C1 and C2. If any variation is present, adjust for maximum signal.
10. Re-tune to original short wave station and re-adjust trimmers C2 and then C1, for maximum signal strength.

TEST VOLTAGES

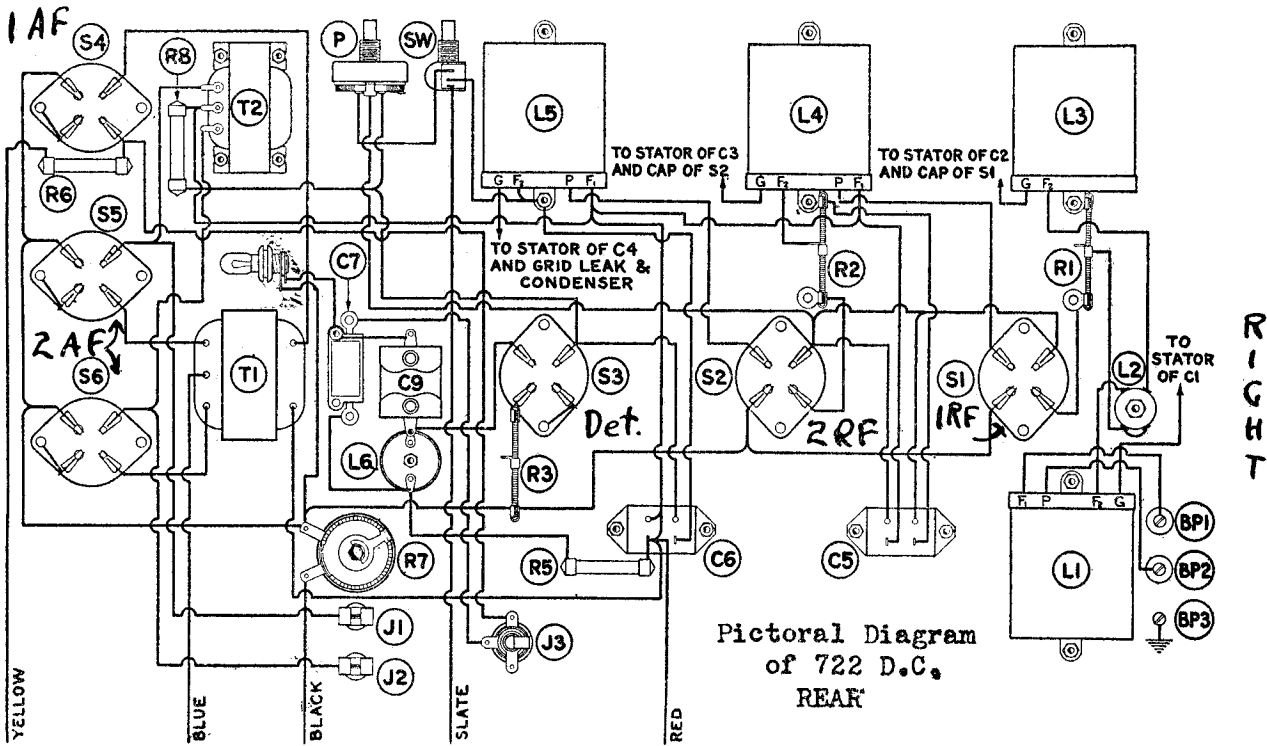
With rectifier tube only in socket; Voltage across F lugs of P1 and across R5 should be 2.45 volts. Across outside lug of P1 and across R5 should be 130 to 150 volts. Chassis -B to arm of P1 (fully right) should be 60 to 70 volts. Chassis to right rear of T1 should be 130, 142, 155 volts. Chassis to left rear lug of S4, 5 to 9 volts DC. Chassis to right rear lug of S3, 20 to 35 volts DC. Chassis to right rear lug of S2, 1.2 to 2.0 volts DC. Chassis to right rear lug of S1, (P1 turned fully right), 1.2 to 2.0 volts DC. Chassis to J1, 160 to 220 volts DC. Chassis to J2, 170 to 240 volts DC. Chassis to J3, 160 to 220 volts DC.

MODEL 722 DC
Schematic, Chassis

SILVER - MARSHALL, INC.



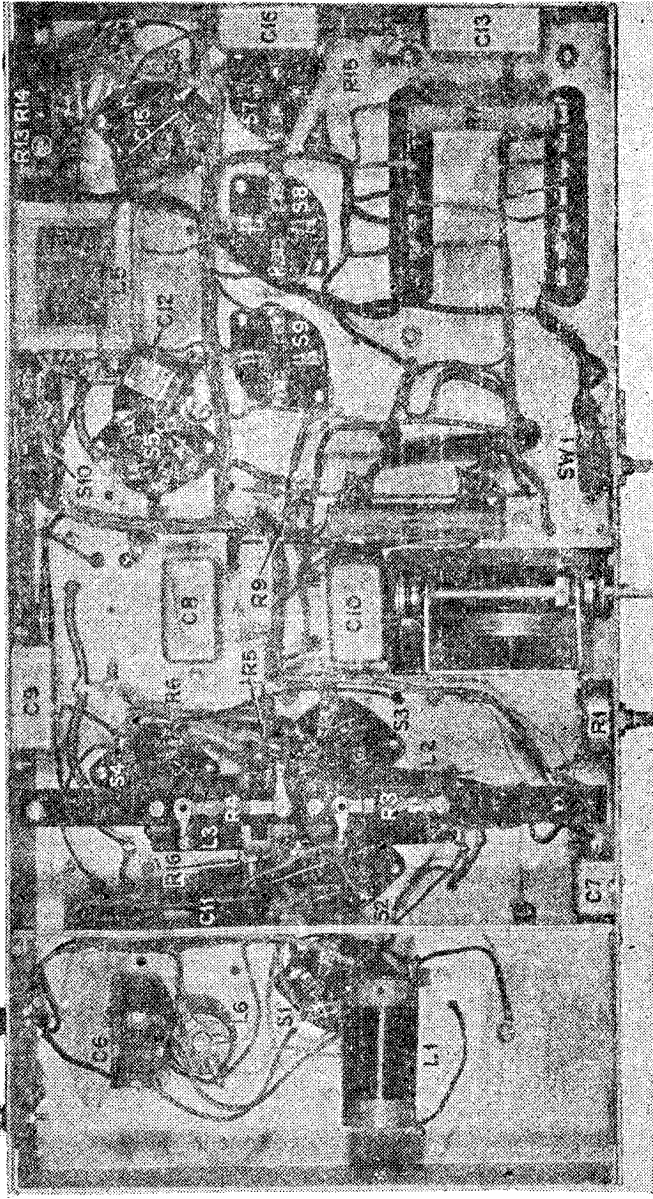
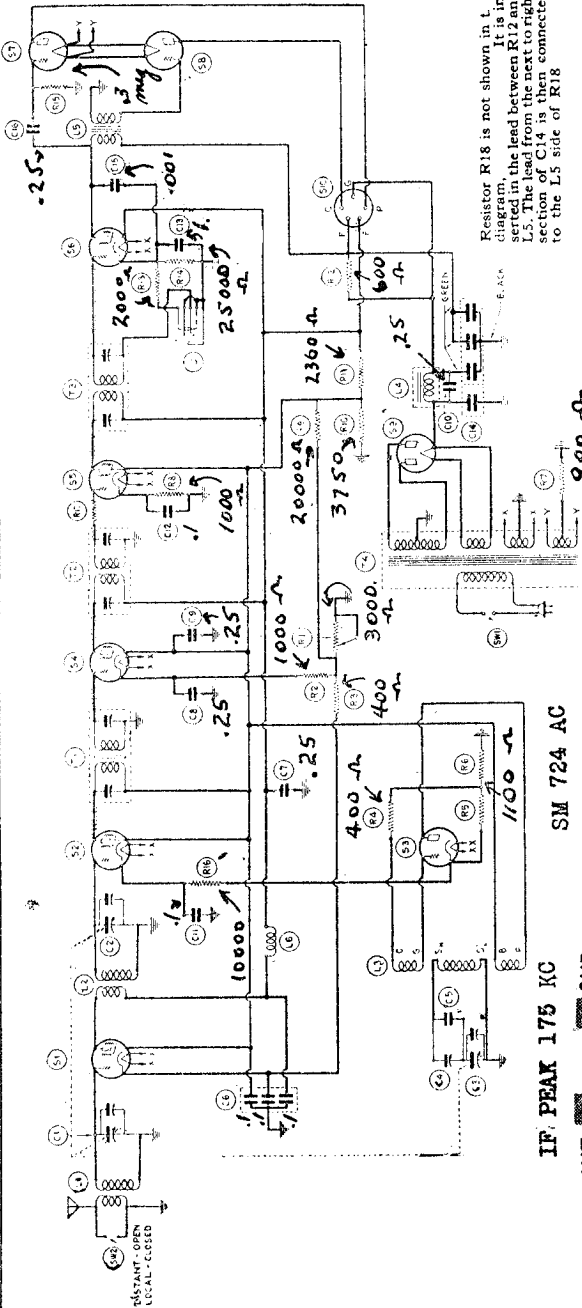
Schematic diagram of the 722DC, showing all parts keyed



- | | | | |
|-----------|--|----|-----------------------|
| C1,2,3,4, | .00035 mfd 4 gang condenser | | |
| C5,6 | block condensers containing three .1 mfd units | | |
| C7 | .006 mfd. | | |
| C8 | .00015 mfd. | | |
| C9 | .0005 mfd. | | |
| P | 10000 ohm potentiometer. | R7 | Rheostat(sub-base) |
| R1,2,3 | 15 ohm center tapped. | R8 | 20000 ohms (one watt) |
| R4,6 | 2 megohm (one watt) Red | | Orange |
| R5 | 60000 ohm(one watt) Blue | | |

SILVER - MARSHALL, INC.

MODEL 724 AC
Schematic, Chassis
Voltage Data

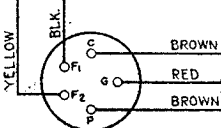


VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current MA
R.F.	(S1)	24	2.15	168	84	1.3
1st Det.	(S2)	24	2.16	75	84	9.5
Oscillator	(S3)	27	2.20	78	84	6.0
1st I. F.	(S4)	24	2.17	165	82	2.8
2nd I. F.	(S5)	24	2.22	164	83	3.0
2nd Det.	(S6)	24	2.19	208	160	16.0
Audio (Right)	(S7)	45	2.57	235	...	48.0
Audio (Left)	(S8)	45	2.57	235	...	20.0*
Rectifier	(S9)	80	4.80	...	...	...

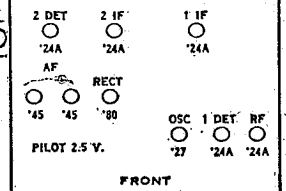
*Misleading due to current drawn by meter.

FIELD LEADS OF NO 851 SPEAKER



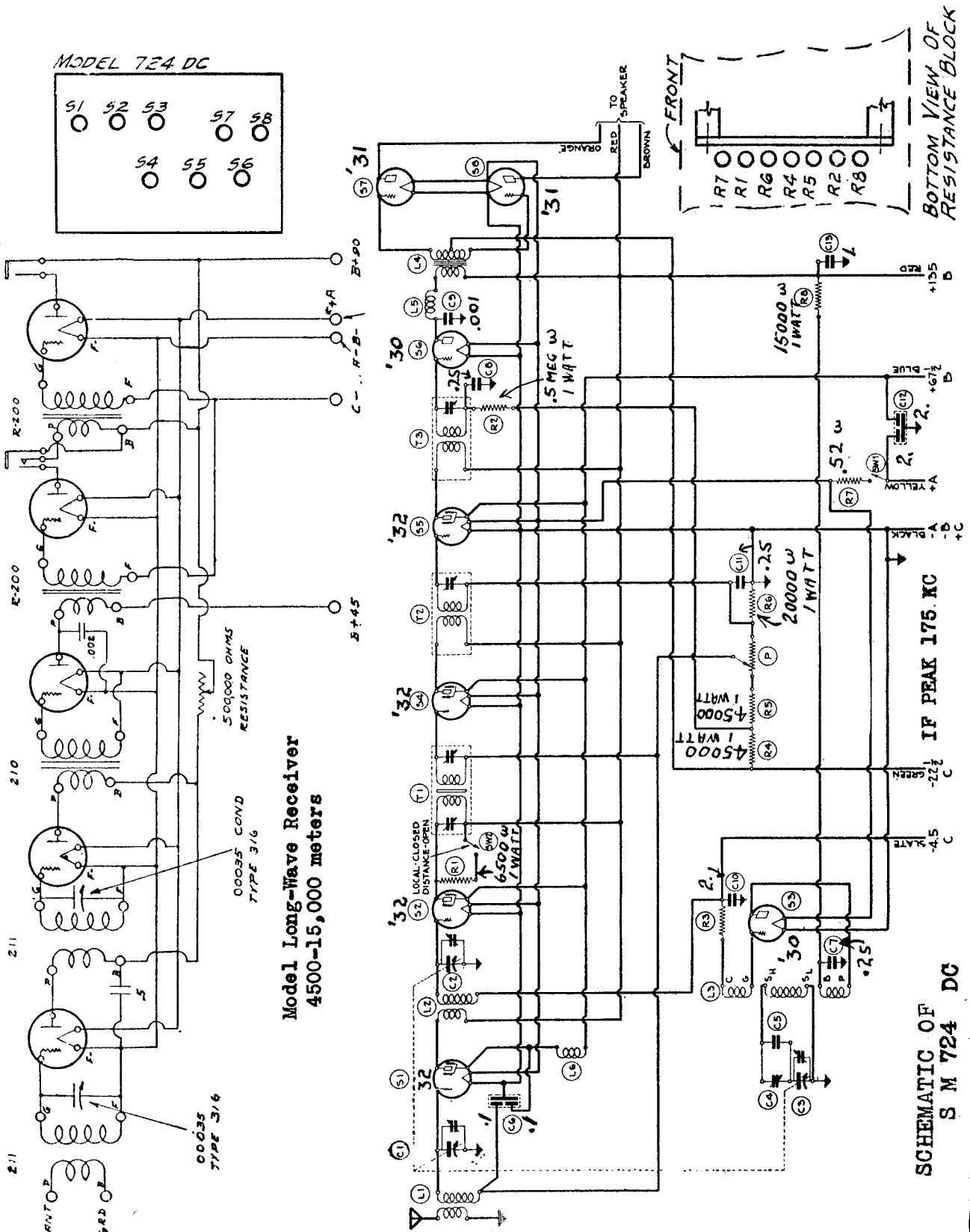
NO 705 CABLE

S-M NO 851 SPEAKER Model 724 Superheterodyne Receiver



FRONT

MODEL 724 DC
 MODEL Long-Wave Receiver SILVER - MARSHALL, INC.



Model Long-Wave Receiver
 4500-15,000 meters

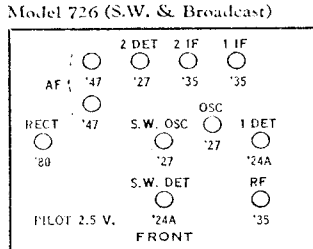
SCHEMATIC OF
 S M 724 DC

SILVER - MARSHALL, INC.

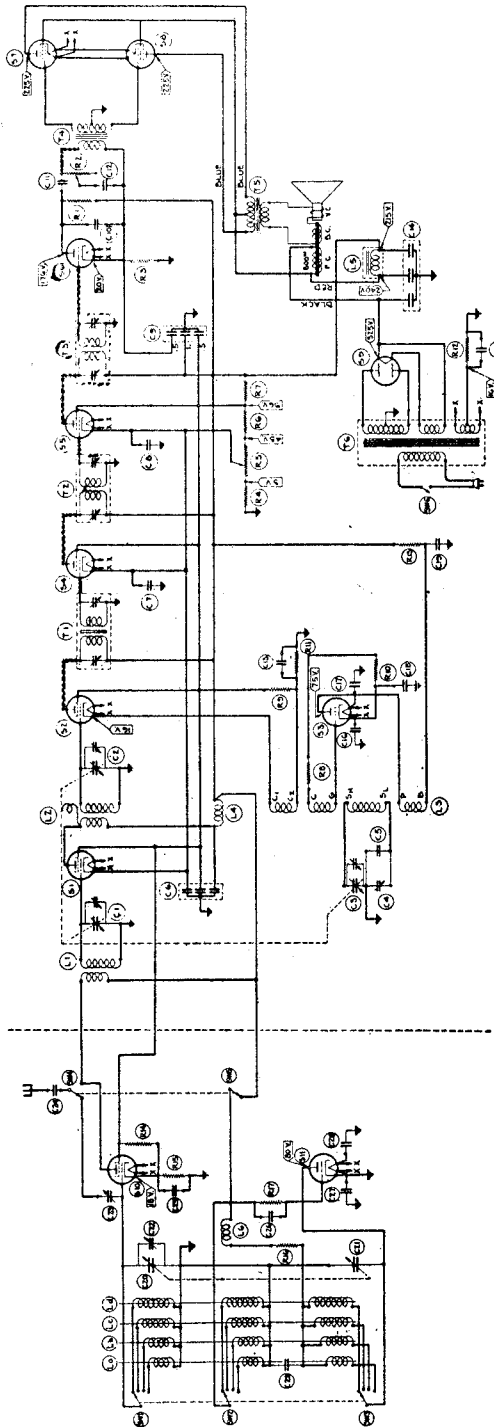
MODEL 726
Schematic
Voltage, Data

REPLACEMENT PARTS LIST FOR 726 SW & 726
SHORT WAVE-BROADCAST RECEIVERS

Code	Description	Piece Part No.
L1 -	167-S Coil	
L2 -	168-S Coil	
L3 -	175-S Coil	
L4 -	281 R.F. Choke	
L5 -	10145 Choke	
L6 -	277 R.F. Choke	
La -	S.W. Coil 10-20 Meters	
Lb -	S.W. Coil 20-40 "	
Lc -	S.W. Coil 40-80 "	
Ld -	S.W. Coil 80-200 "	
T1 -	1st I.F. Transformer B-1	
T2 -	2nd I.F. Transformer B-2	
T3 -	3rd I.F. Transformer B-3	
T4 -	A-270 Input Transformer	
T5 -	10143 Output Transformer	
T6 -	10173-S Power Transformer	
C1-C2-C3 -	407 Mmfd. Max. (3-gang variable)	13124
C4 -	Variable 550-600 Mmfd.	16035
C5 -	750 Mmfd. ± 10% (Mica)	
C6 -	Triple 0.1 Mfd.	3316
C7 -	.1 Mfd.	3220
C8 -	.1 Mfd.	3220
C9 -	.5, .5, 1.0 Mfd.	13140
C10 -	.001 Mfd. (Mica)	7039
C11 -	0.15 Mfd.	13145
C12 -	.025 Mfd.	3333
C13 -	.1 Mfd.	3220
C14 -	Three 4 Mfd. units (dry Electrolytic) Potter	13120
C15 -	.1 Mfd.	3220
C16 -	.006 Mfd.	3114
C17 -	.006 Mfd.	3144
C18 -	.1 Mfd.	3220
C19 -	.1 Mfd.	3220
C20-C21 -	140 Mmfd. (2-gang variable)	13161
C22 -	80 Mmfd. (variable)	13162
C23 -	Compensating Cond.	13182
C24 -	.006 Mfd.	3144
C25 -	.006 Mfd.	3144
C26 -	.001 Mfd. (Mica)	7039
C27 -	.006 Mfd.	3144
C28 -	.006 Mfd.	3144
R1 -	30,000 ohms 1 watt	14693
R2 -	1/2 megohm tapered variable resistor	14368
R3 -	60,000 ohms 1 watt	4698
R4 -	100 ohms wire wound	4743
R5 -	4,500 ohms volume control (tapered)	14367
R6 -	13,500 ohms 1 watt	14694
R7 -	15,000 ohms 2 watt	14690
R8 -	400 ohms wire wound	4701
R9 -	60,000 ohms 1 watt	4698
R10 -	100 ohms wire wound	4743
R11 -	10,000 ohms 1 watt	14696
R12 -	220 ohms 2 watt	14692
R13 -	10,000 ohms 2 watt	4726
R14 -	60,000 ohms 1 watt	4698
R15 -	6,500 ohms 1 watt	14683
R16 -	10,000 ohms 2 watt	4726
R17 -	10,000 ohms 1 watt	14696
SW1-SW2-SW3 -	S.W. Change-over switch	15115
SW4-SW5 -	S.W.-BROADCAST SWITCH	15116
SW6 -	ON-OFF SWITCH (Combination with Pot.)	
S2-S10 -	'24 Tubes	
S3-S6-S11 -	'27 "	
S7-S8 -	'47 "	
S1-S4-S5 -	'51 "	
S9 -	'80 "	



As a short wave broadcast receiver, the circuit is as follows. By throwing a switch, the antenna is fed into the short wave detector circuit using a '24 type tube. A short wave oscillator of special design using a '27 tube, operating 650 kc. away from the short wave detector heterodynes the incoming signal to the frequency to which the r.f. stage of the broadcast receiver is tuned, the broadcast tuning dial being set on a clear channel at approximately 650 kc. for best results. As a short wave super, there are therefore three detectors and two oscillators, giving so-called double "suping"



Model 726 S.W. and Broadcast Superhet.

IF PEAK 175 KC

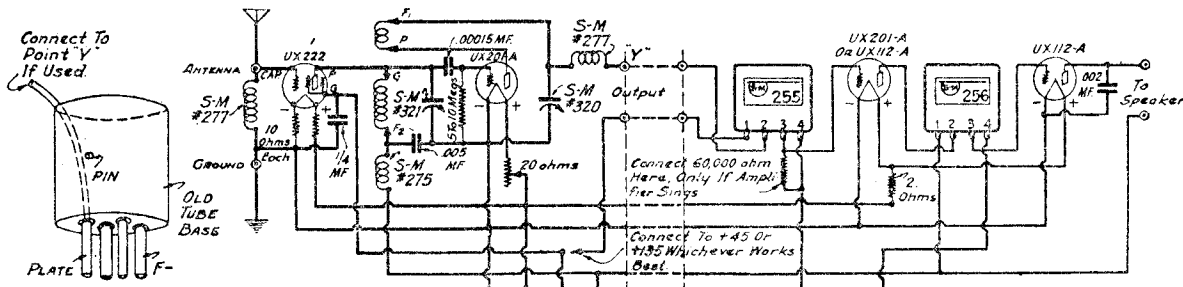
VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current Mills
S.W. Det	(S10)	2.2	216	96	18	.08
S.W. Osc.	(S11)	2.25	80	....	0	8.
R.F.	(S1)	2.25	216	96	3	6.
1st Det	(S2)	2.35	216	96	16	.1
Osc.	(S3)	2.35	75	....	1.1	10.
1st I.F.	(S4)	2.3	216	96	3	6.
2nd I.F.	(S5)	2.35	216	96	3	6.
2nd Det.	(S6)	2.35	178	....	20	.1
Audio (right)	(S7)	2.4	224	240	16	32.
Audio (left)	(S8)	2.4	220	240	16	32.
Rectifier	(S9)	5.1	....	....	....	....

As a broadcast receiver, the 726SW tunes from below 200 to above 550 meters and as a short wave receiver tunes from just under 10 meters to 200 meters without plug in coils.

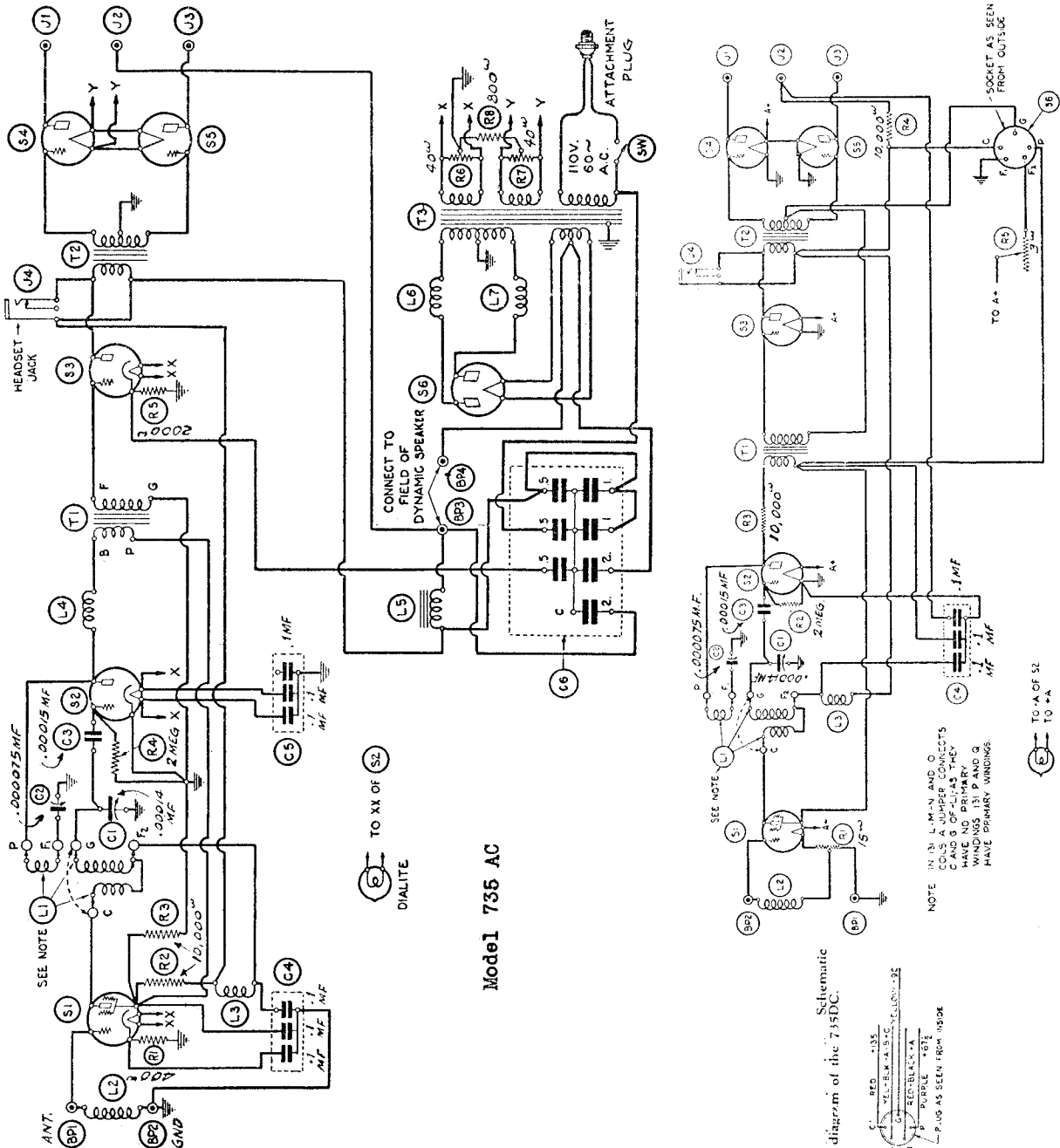
SILVER - MARSHALL, INC.

MODEL 730, 731
 MODEL 735 AC
 MODEL 735 DC



NOTE:—For two tube short wave adapter to be used with any standard radio set:—
 A—Omit all parts to right of dotted lines.
 B—Connect upper "output lead" (from No. 277 choke) to plate pin of old tube base.
 C—Connect battery binding posts to radio set batteries.
 D—Insert old tube base adapter in detector socket of regular radio set, which will join the two tube short wave adapter to the audio amplifier of set.

Schematic circuit of 730 and 731 kits, and details of adapter made from an old tube base.

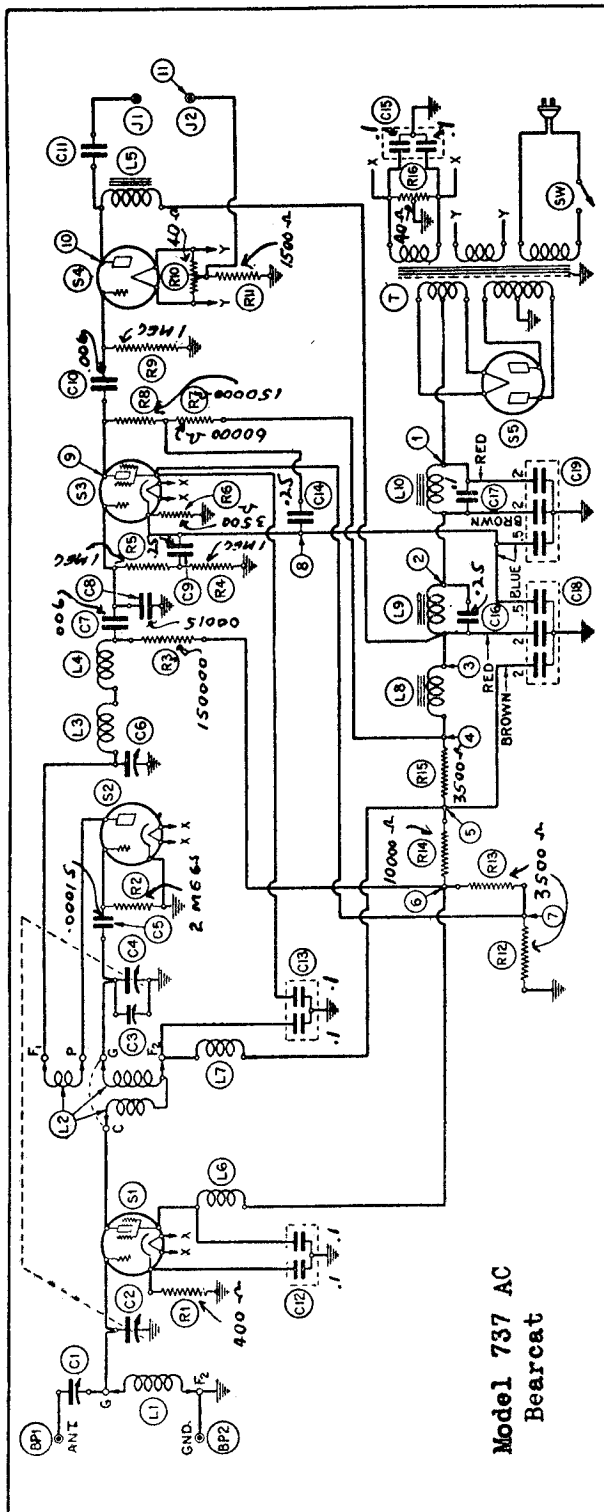


Model 735 AC

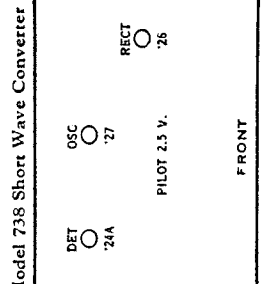
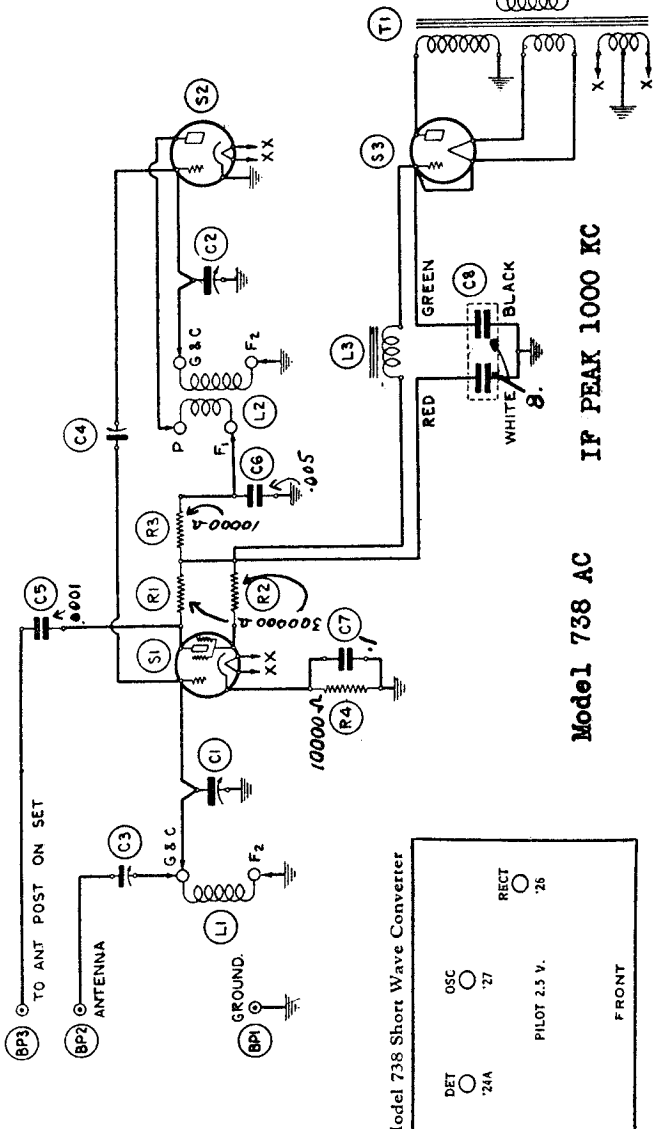
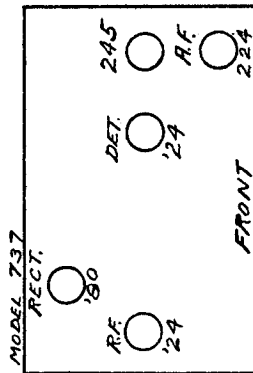
Schematic diagram of the 735DC.

RED - 105
 GREEN - 105
 PURPLE - 105
 PLUG AS SEEN FROM INSIDE

MODEL 737 AC Bearcat
 MODEL 738 AC SW Converter SILVER - MARSHALL, INC.



Model 737 AC
 Bearcat



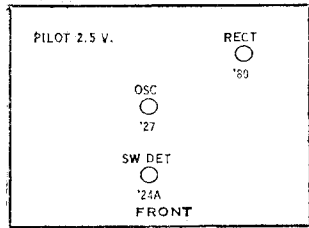
Model 738 AC
 Short Wave Converter

IF PEAK 1000 KC

SILVER - MARSHALL, INC.

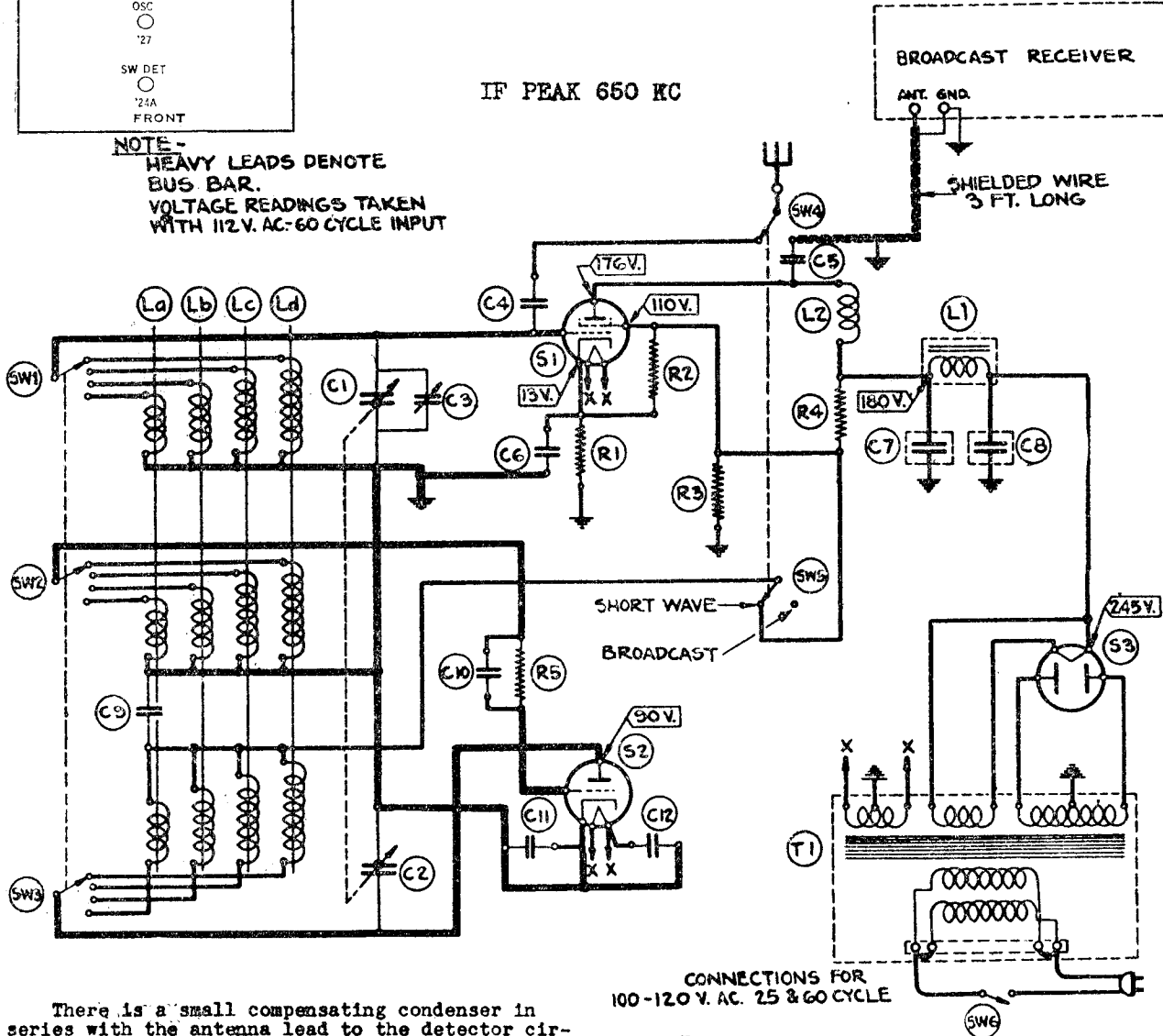
MODEL 739
SW Superhet Converter

Model 739 (Short Wave Converter) (1931)



IF PEAK 650 KC

NOTE -
HEAVY LEADS DENOTE
BUS BAR.
VOLTAGE READINGS TAKEN
WITH 112 V. AC-60 CYCLE INPUT

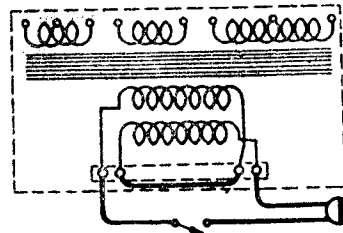


There is a small compensating condenser in series with the antenna lead to the detector circuit (on rear of panel, at top center). This condenser is adjusted at the factory for best operation on a test antenna. It will be found that a slight adjustment of this condenser can be made (with a screw driver) for realigning to the particular antenna-ground combination, on which the 739 is to be operated, to give maximum results. To make this adjustment, the receiver should be tuned to a short wave station and without adjusting any controls, this compensating condenser readjusted a slight fraction of a turn at a time until the station comes in at its best.

- C6, C11, C12 3 Polymet .006 condenser
- C5, C10 2 Polymet .0001 "
- C9 1 Sprague .1 mfd. condenser
- R5 1 Durham 10,000 ohm resistor
- R2 1 Durham 60,000 ohm resistor
- R1 1 Durham 6500 ohm resistor
- R3 1 Durham 8000 ohm resistor 2 watt.
- R4 1 Durham 3500 ohm resistor, 2 watt.

CONNECTIONS FOR
100-120 V. AC. 25 & 60 CYCLE

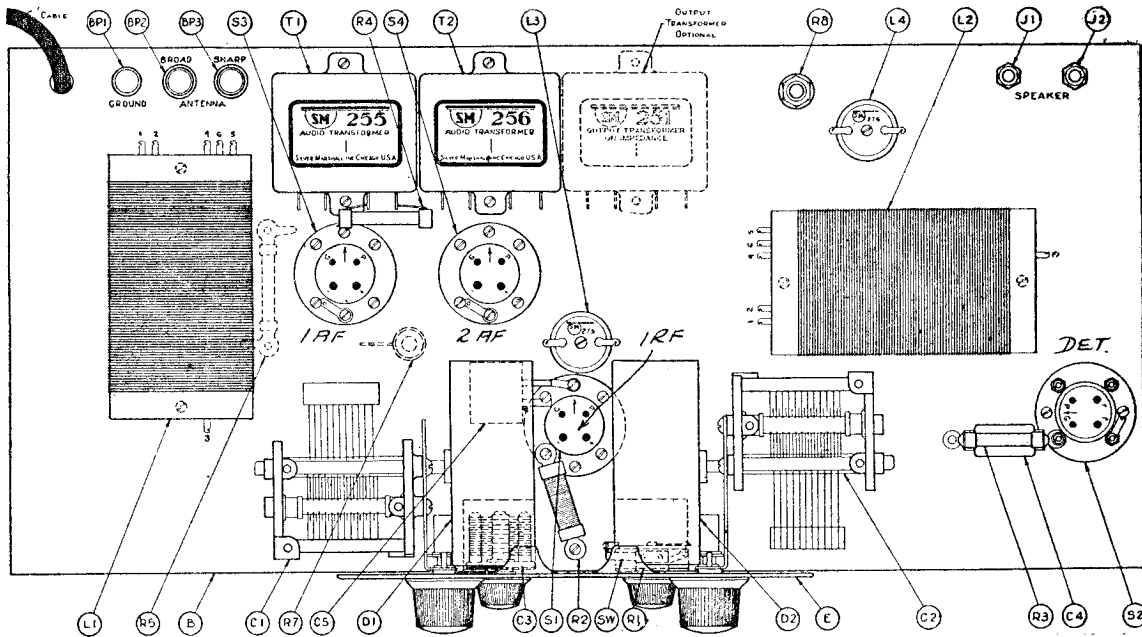
NOTE:-
PRIMARY NORMALLY WIRED &
SHIPPED FOR 100-120V. OPERATION



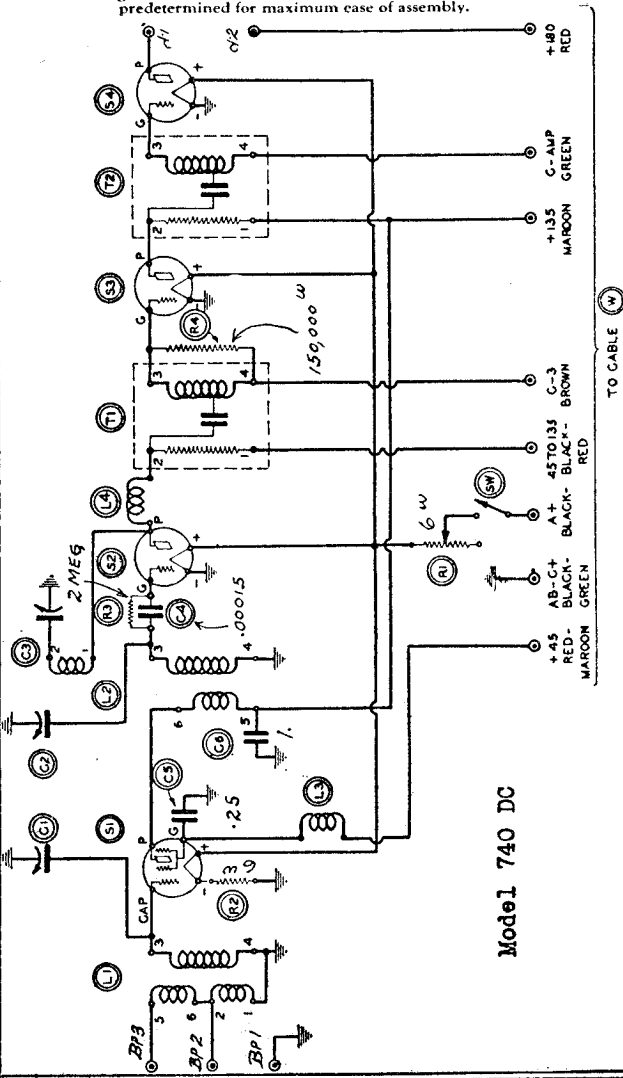
CONNECTIONS FOR
200-240 V. AC. 25 & 60 CYCLE

MODEL 740 DC
 MODEL 740 AC
 Schematic, Chassis

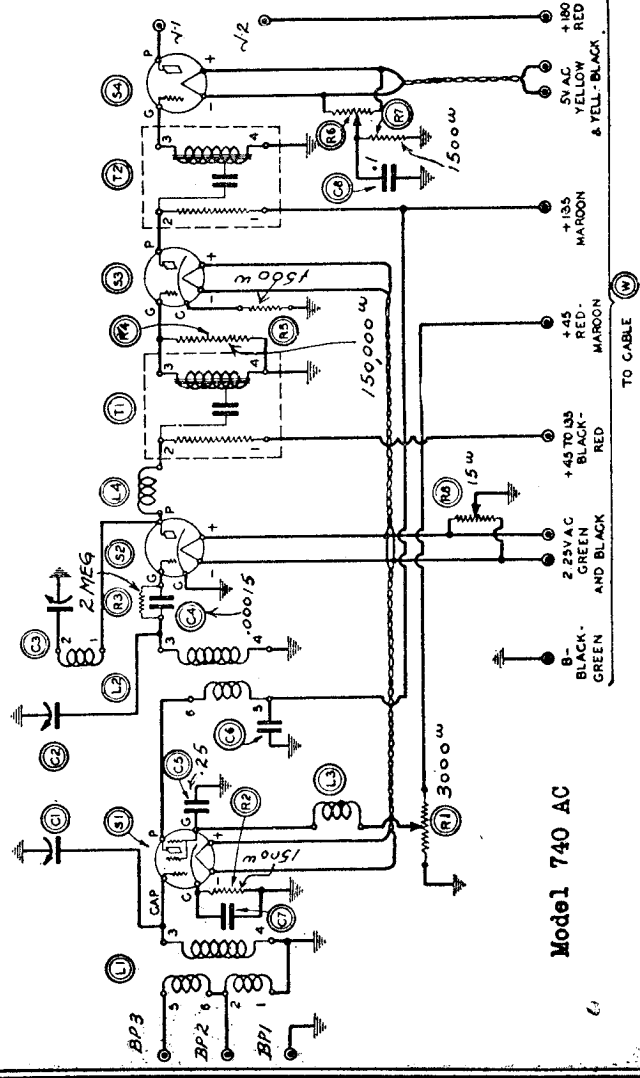
SILVER - MARSHALL, INC.



This layout drawing for the 740 (D. C. tube) Receiver shows the exact positions of all parts, positions of different mounting lugs, and just where screw heads or mounting nuts fall. Additional parts for the 740 AC (A. C. tube) Receiver are shown in dotted lines. This diagram should be studied most carefully in assembling either receiver, for the position of every part down to the last screw and nut has been predetermined for maximum ease of assembly.



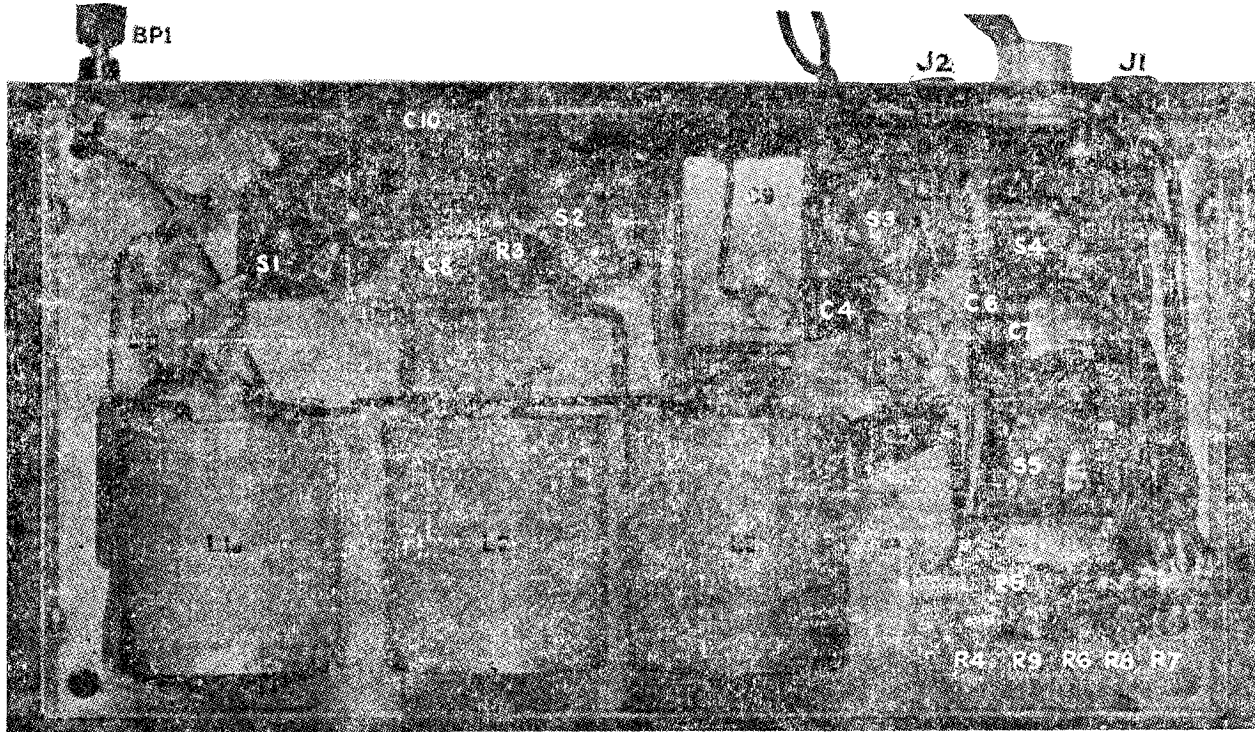
Model 740 DC



Model 740 AC

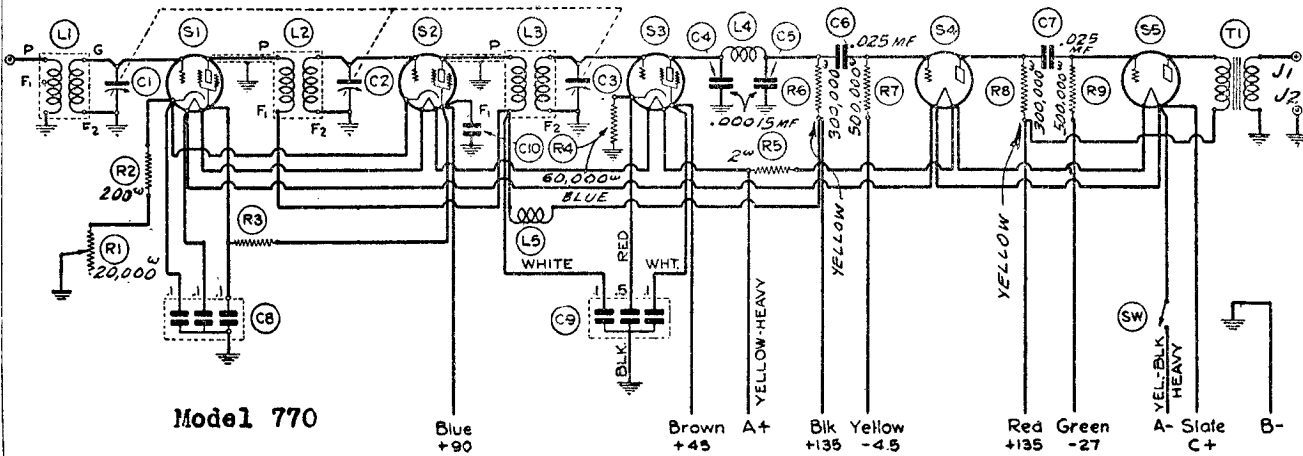
SILVER - MARSHALL, INC.

MODEL 770 Auto
Schematic, Chassis



FRONT

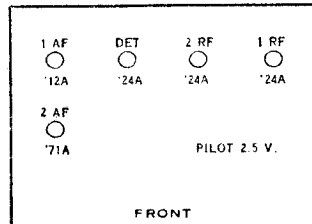
Bottom view of 770 chassis showing location of coils, resistors, and other material which will be of value in replacing parts.



Model 770

Schematic diagram of 770 Auto-Set.

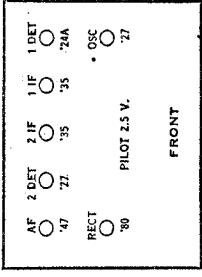
Model 770 Auto



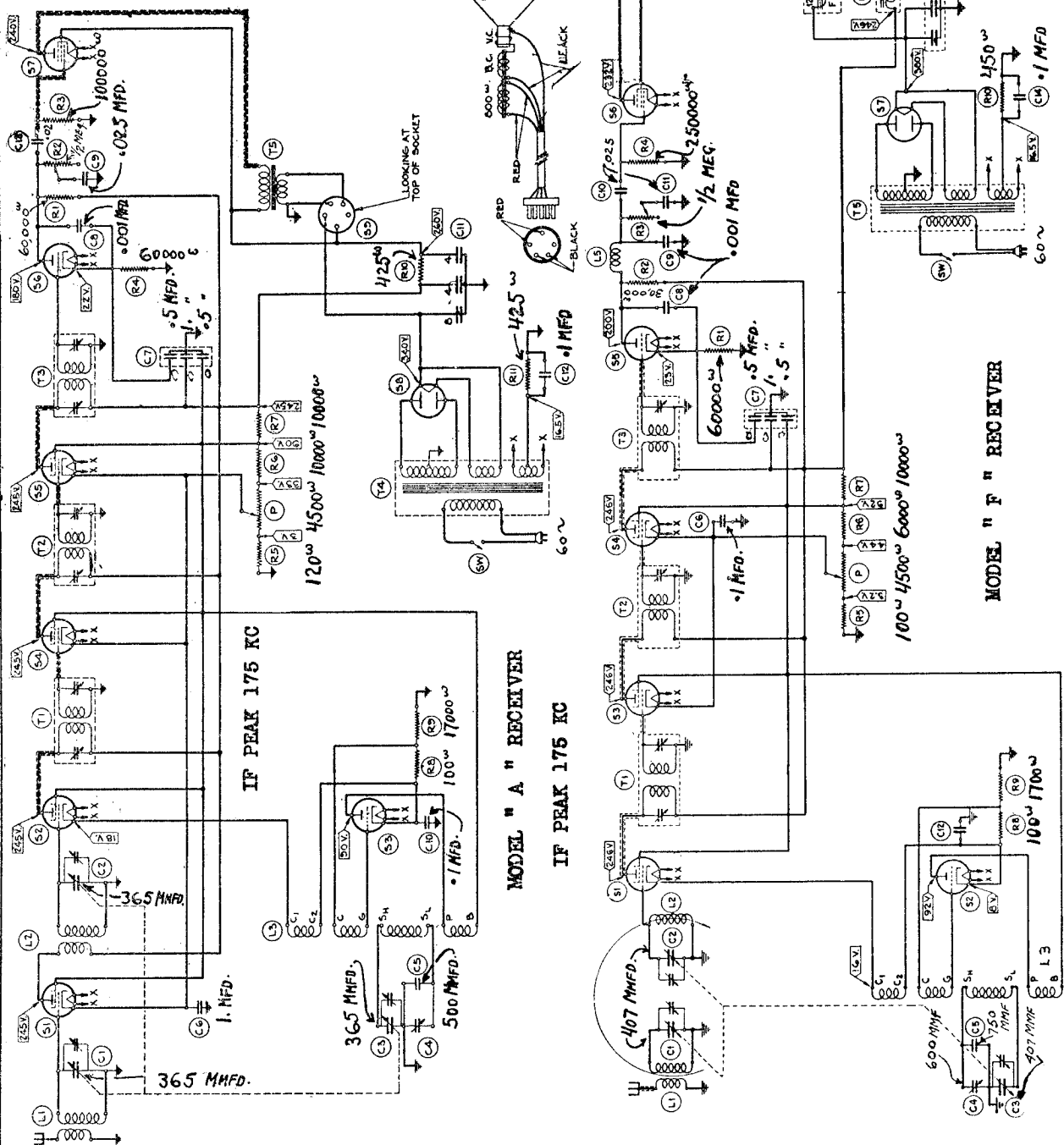
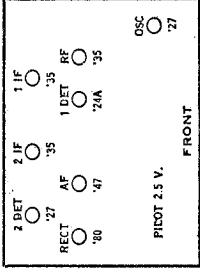
SILVER - MARSHALL, INC.

MODEL A.
MODEL F

Model F (1931)



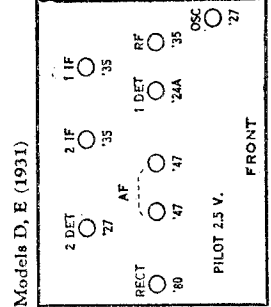
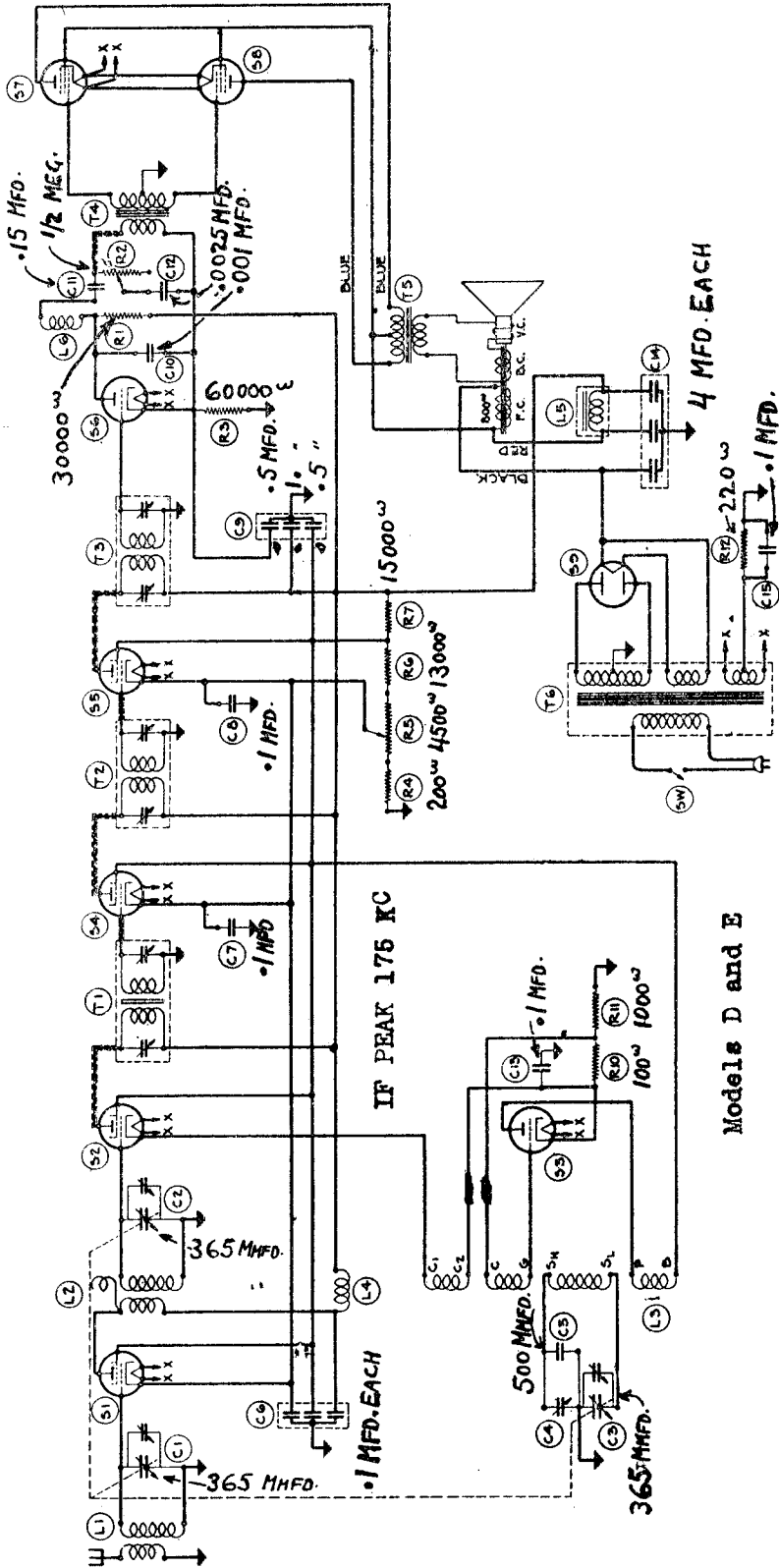
Model A (1931)



MODEL " F " RECEIVER

SILVER - MARSHALL, INC.

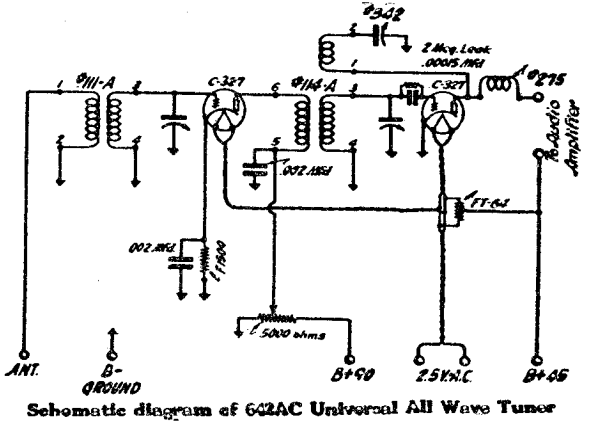
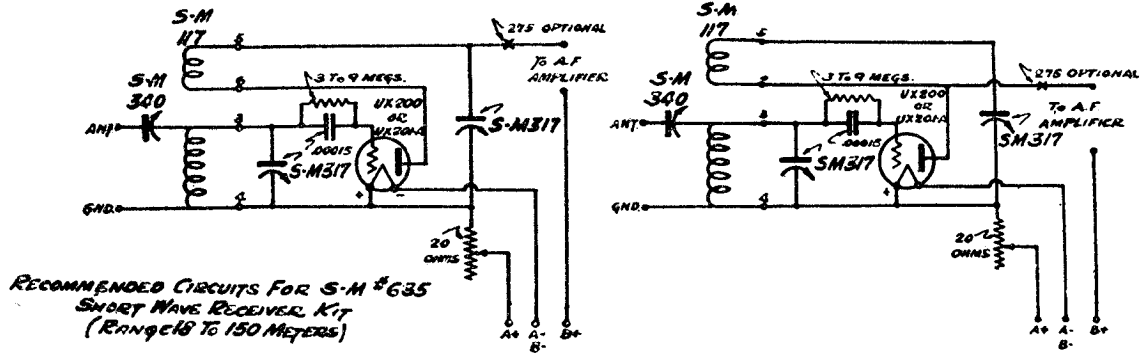
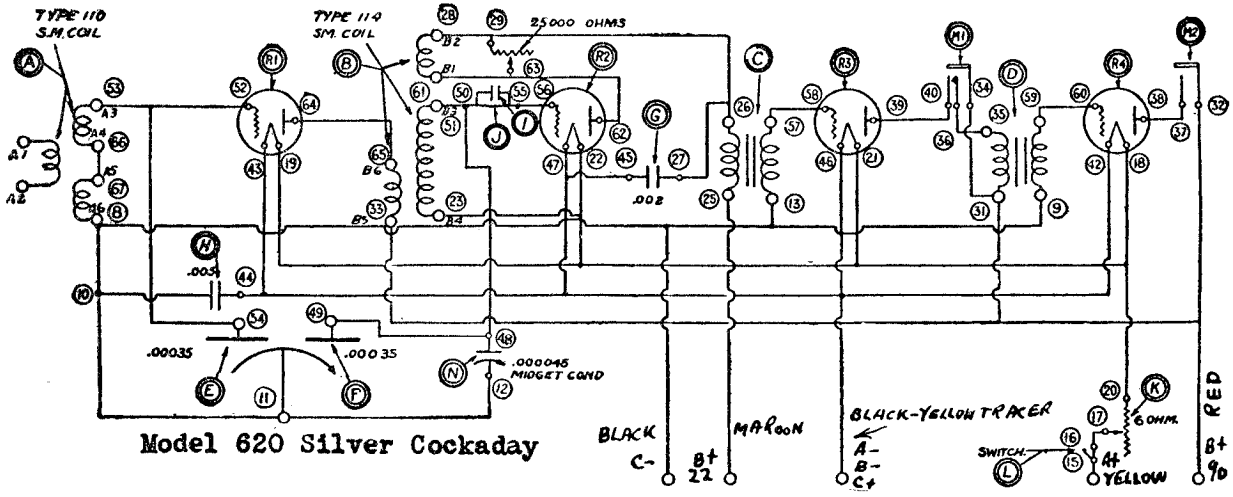
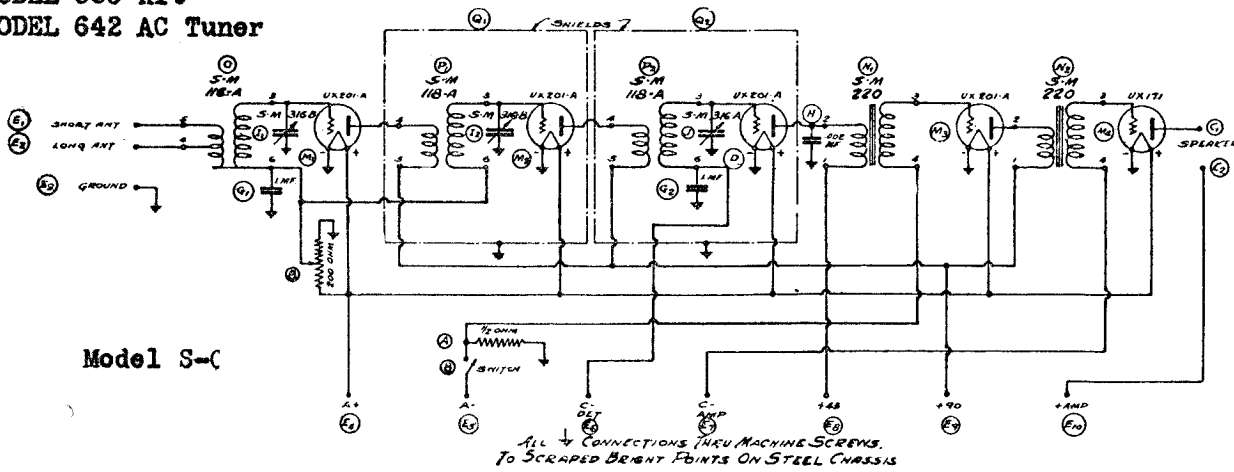
MODELS D, E
Schematic, Voltage



Tube No.	Type	A Volts	B Volts	Screen	C Volts
1st R.F.	551	2.3	225	80	3.2
1st Det.	224	2.3	225	80	12.
Osc.	227	2.3	80		6.2
1st I.F.	551	2.3	225	80	3.2
2nd I.F.	551	2.3	225	80	3.2
2nd Det.	227	2.3	220		20.
Pentodes	247	2.3	220	255	16.5
Rectifier	280	5.0			

MODEL S-C II
 MODEL 620 S-C
 MODEL 635 Kit
 MODEL 642 AC Tuner

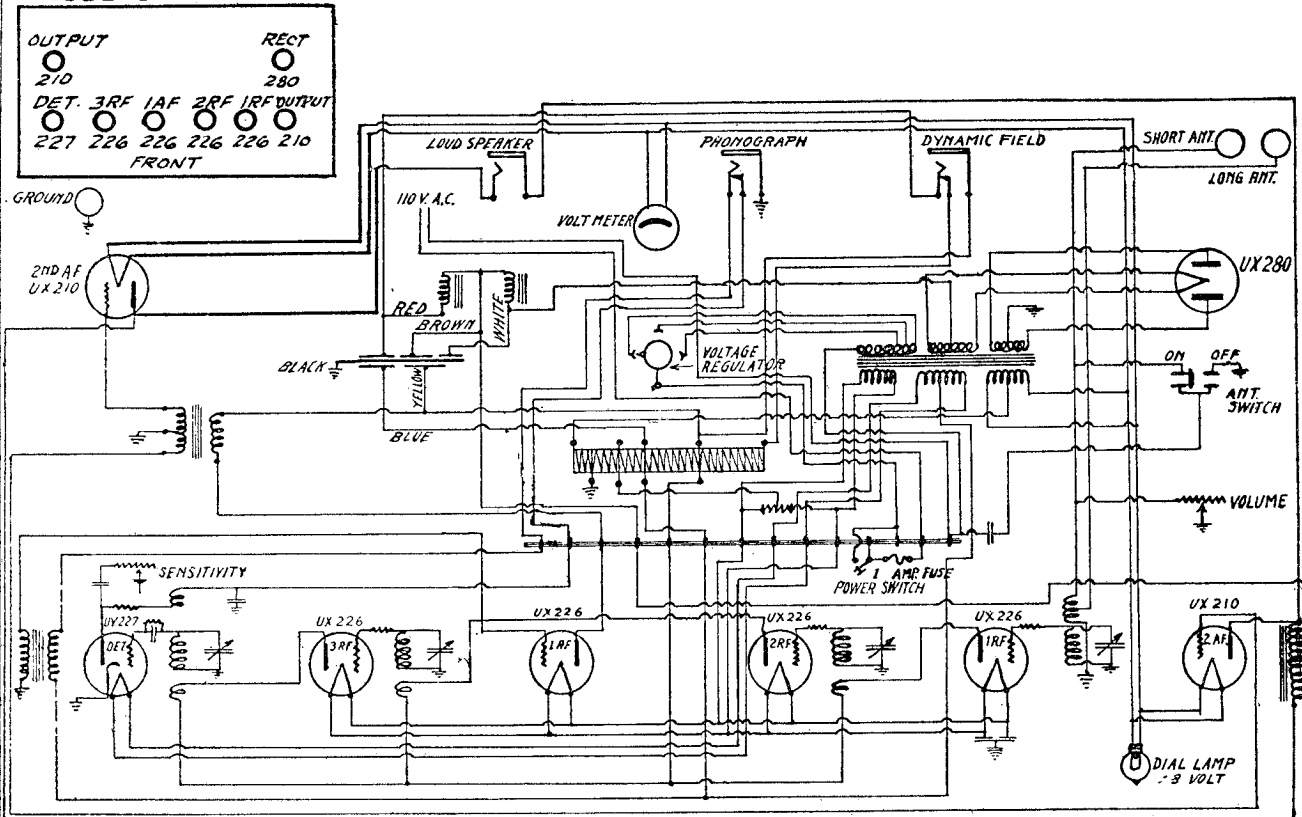
SILVER - MARSHALL, INC.



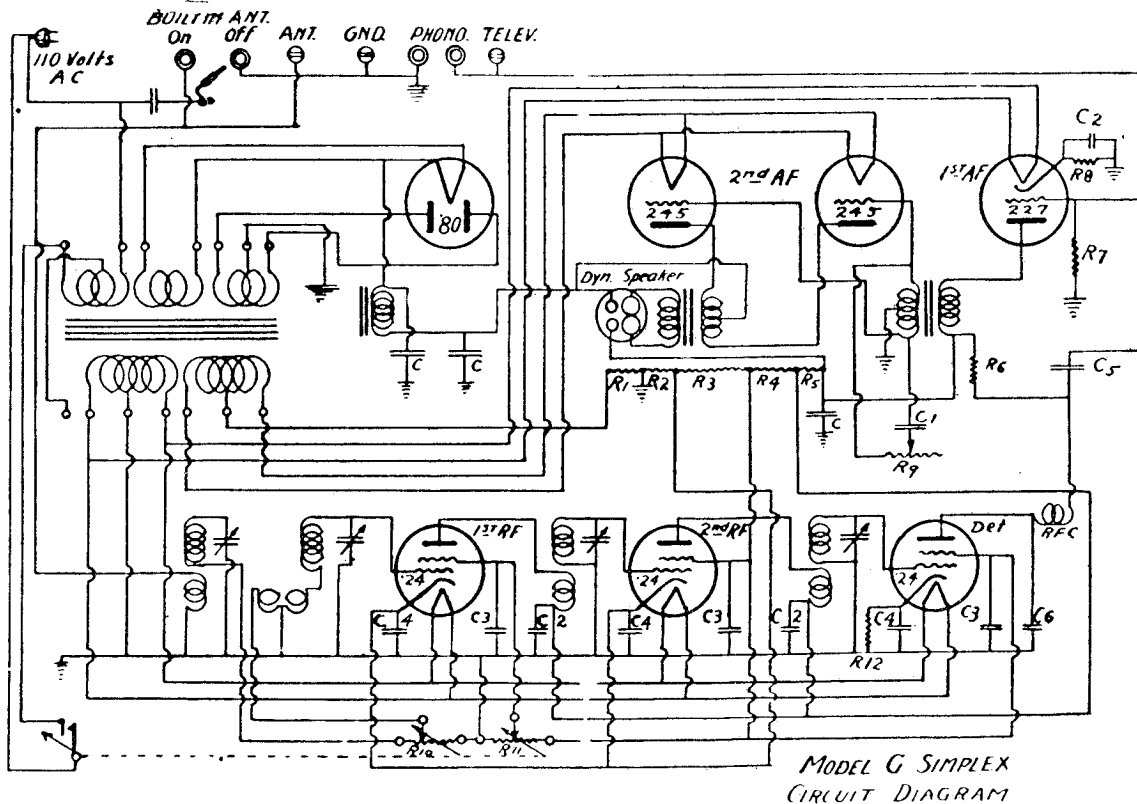
SIMPLEX RADIO CO.

MODEL D Schematic
MODEL G Schematic

MODEL D



CIRCUIT DIAGRAM, MODEL D, SIMPLEX ELECTRIC.

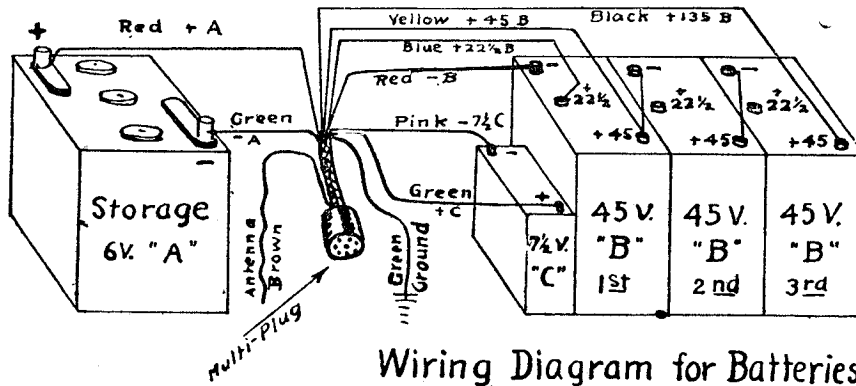
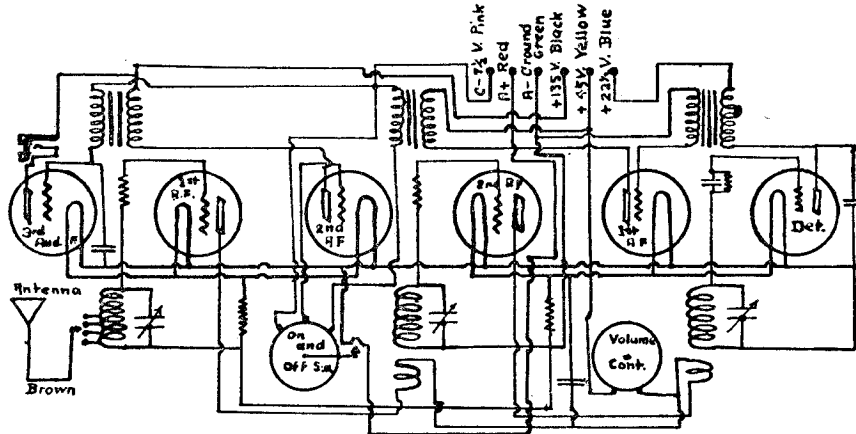
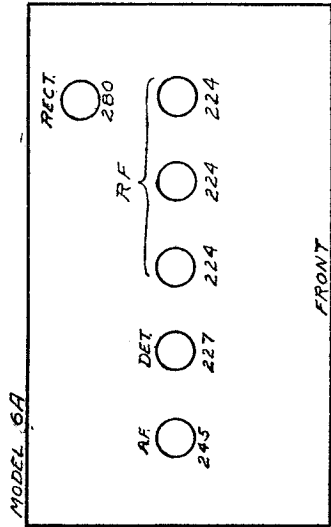


MODEL G SIMPLEX
CIRCUIT DIAGRAM

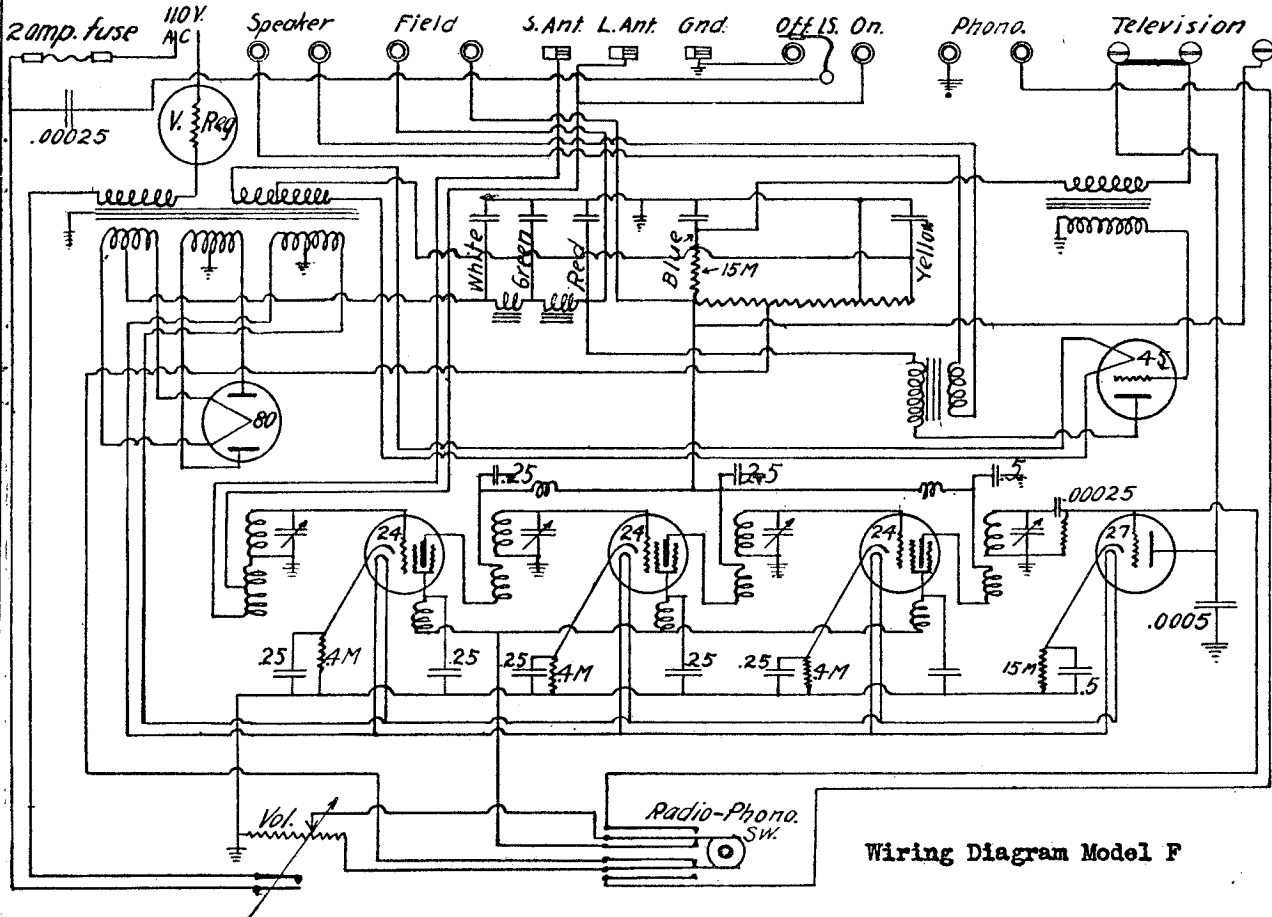
MODEL 6A
MODEL F

SIMPLEX RADIO CO.

Wiring Diagram Model 6A



Wiring Diagram for Batteries

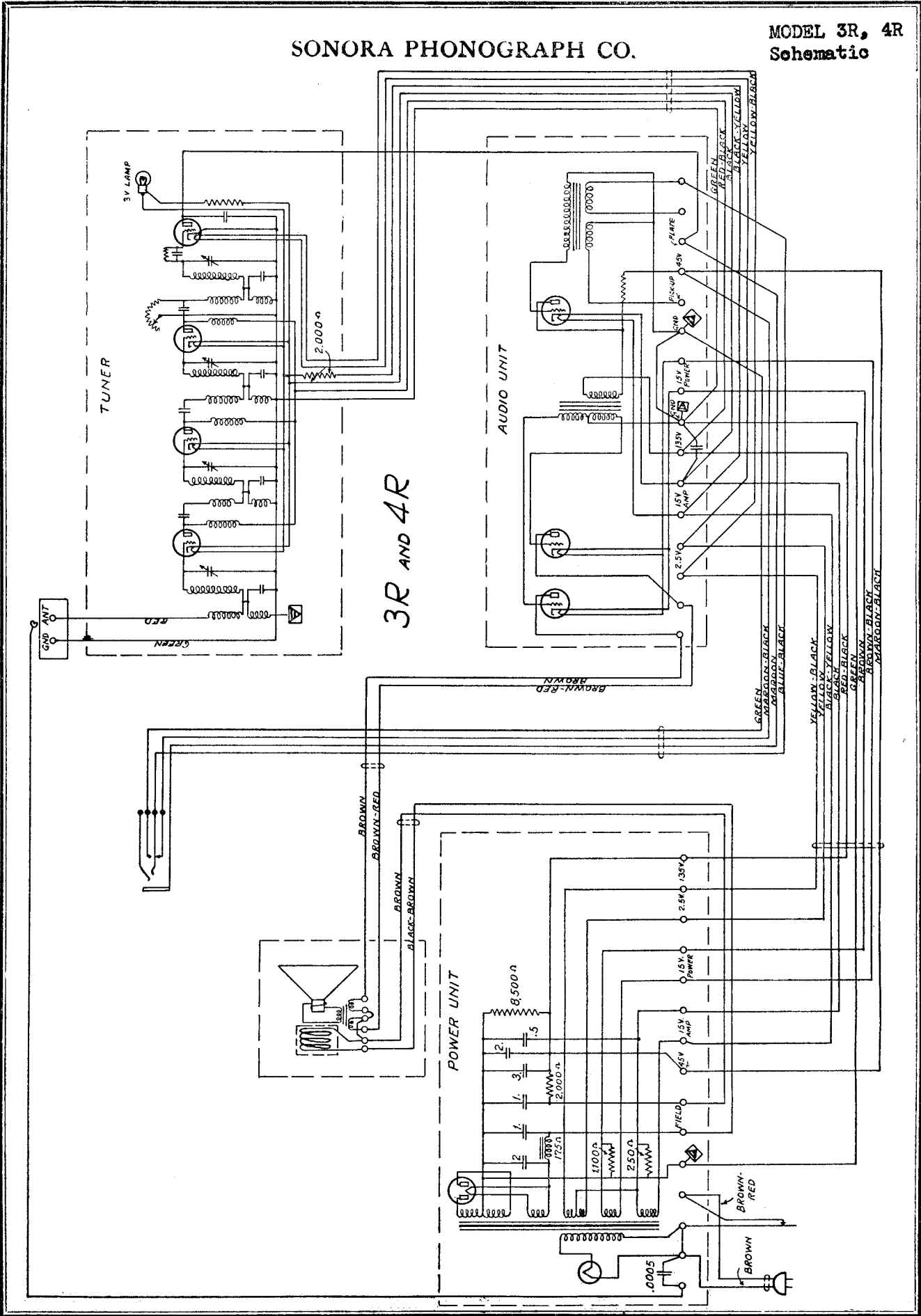


Wiring Diagram Model F

SONORA PHONOGRAPH CO.

MODEL 3R, 4R Schematic

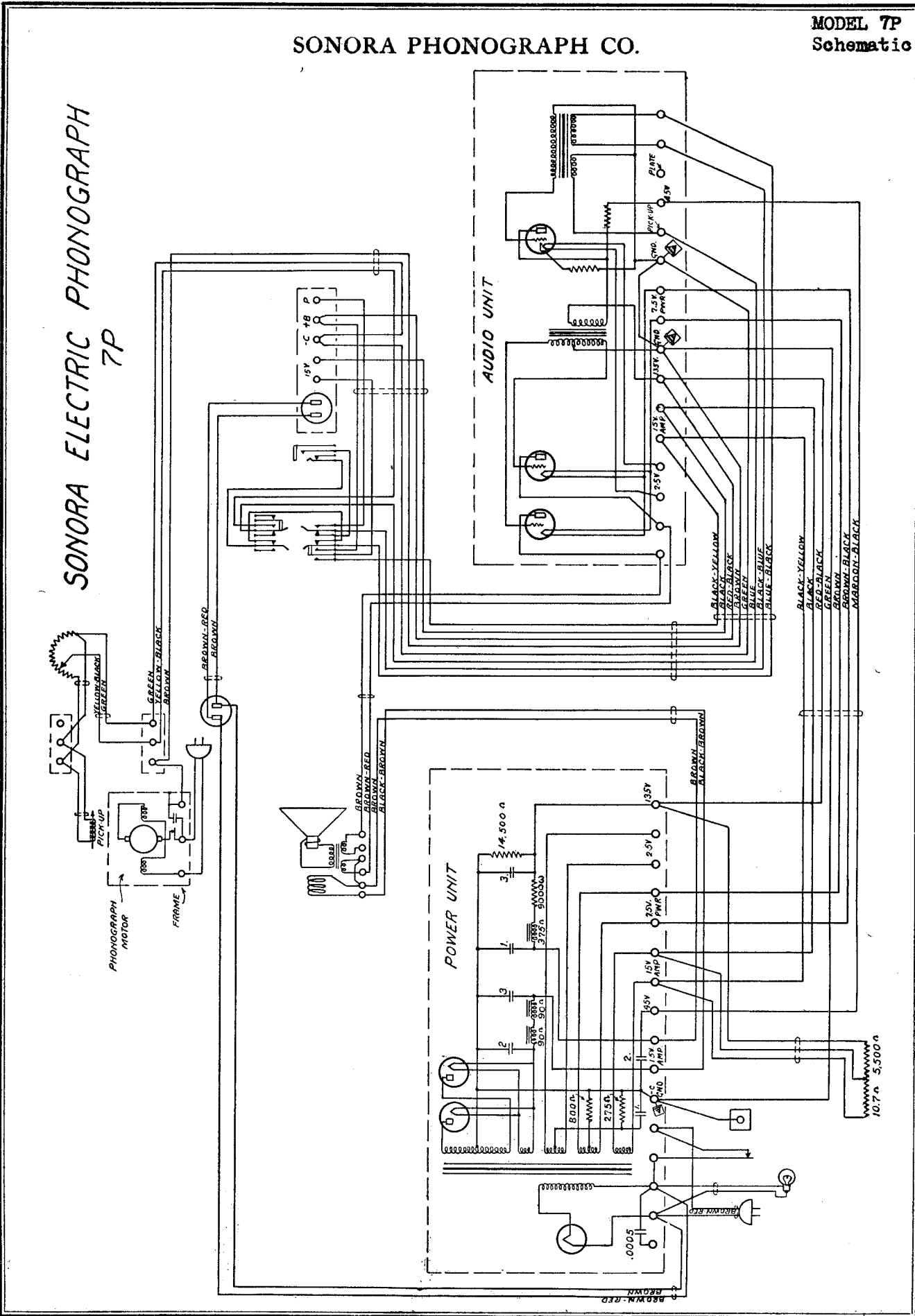
3R AND 4R



SONORA PHONOGRAPH CO.

MODEL 7P
Schematic

SONORA ELECTRIC PHONOGRAPH
7P



MODEL A30, A32
Schematic

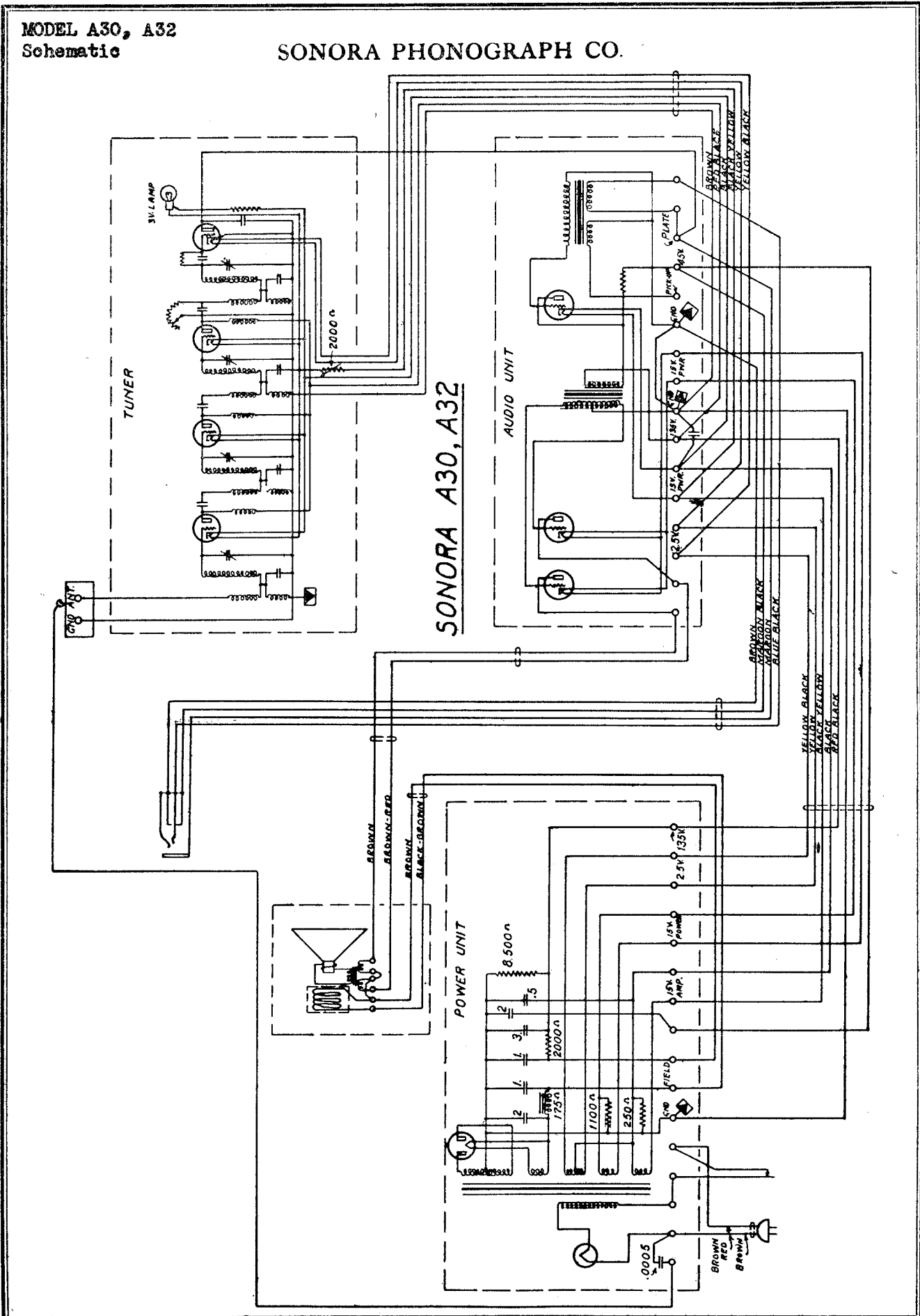
SONORA PHONOGRAPH CO.

SONORA A30, A32

TUNER

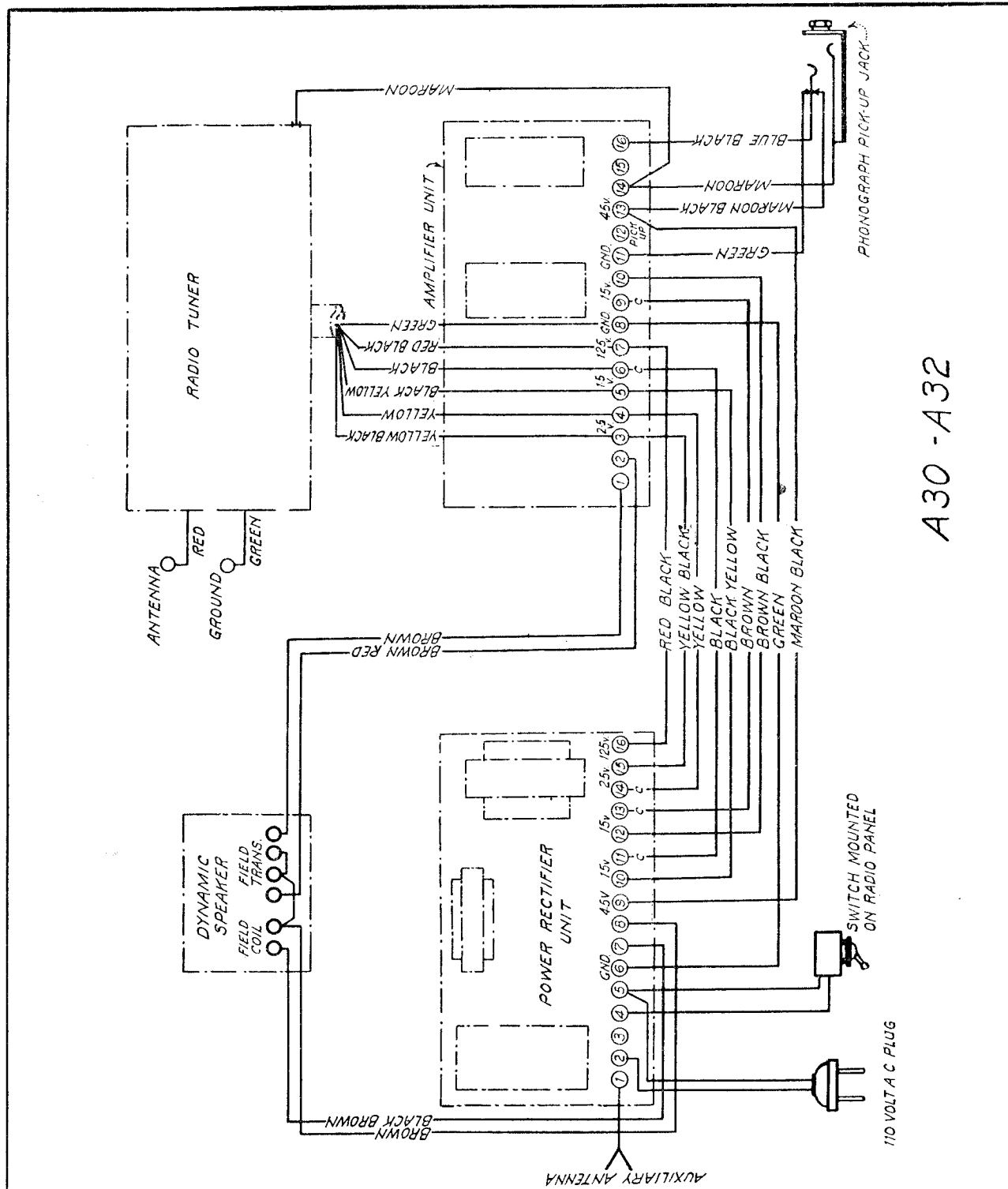
AUDIO UNIT

POWER UNIT



SONORA PHONOGRAPH CO.

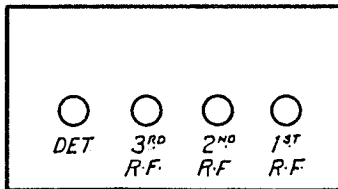
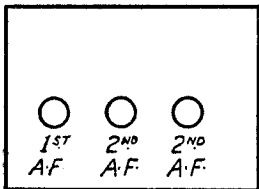
MODEL A30, A32
Wiring Diagram



A30 - A32

30, 32, 40

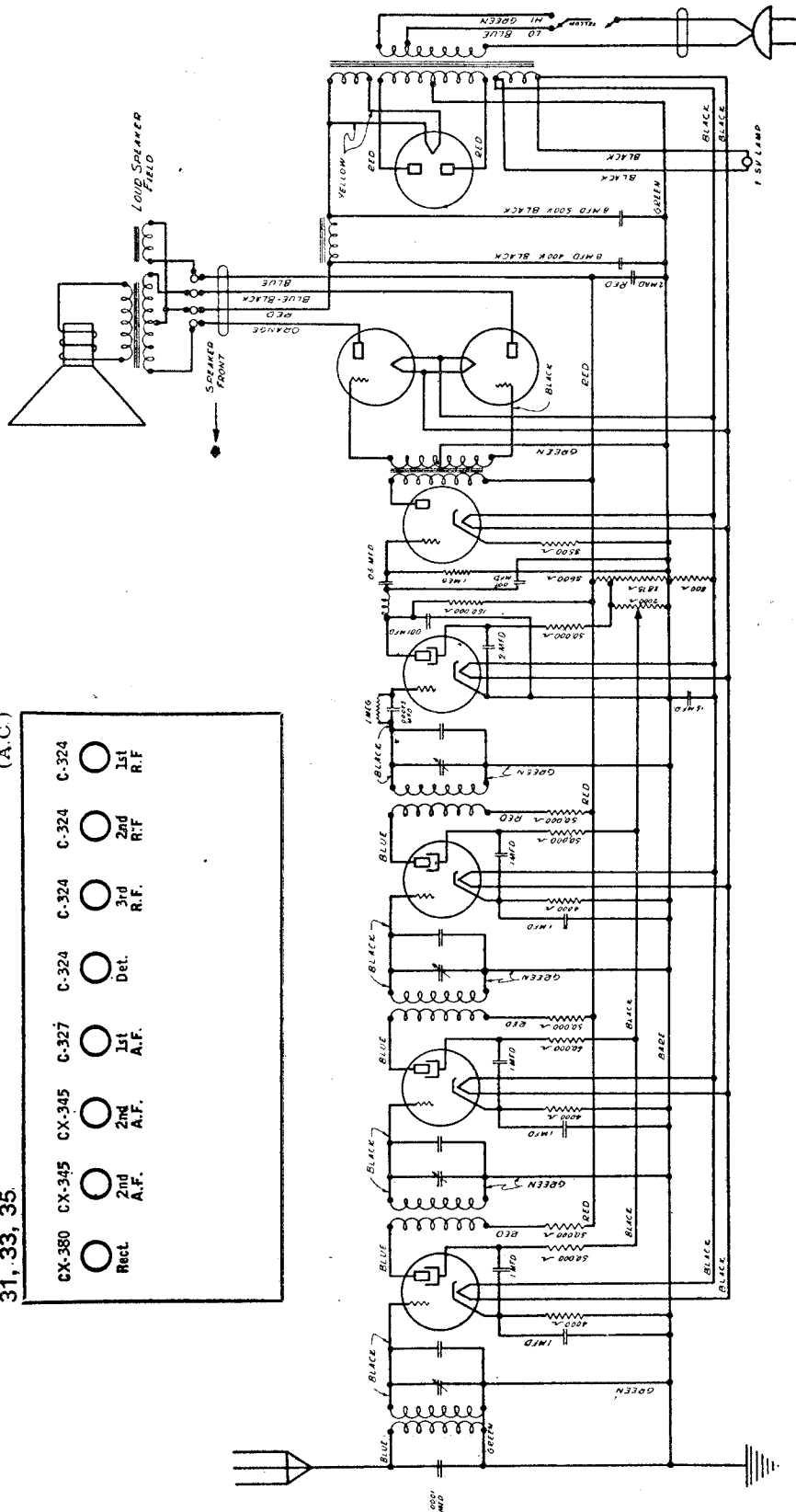
(A.C.)



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st. A.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT			TUBE IN TUBEYER						
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE
1	RA-1	1st. R.F.	15.0	136	14.0	130	6	6	6.6	12.0	5.4	
2	RA-1	2nd. R.F.	15.0	136	14.0	130	6	6	6.6	12.0	5.4	
3	RA-1	3rd. R.F.	15.0	136	14.0	130	6	6	6.6	12.0	5.4	
4	DE-1	Detector	2.5	88	2.1	20	6	6	6.6	1.0	0.2	
5	RA-1	1st. A.F.	15.0	130	14.0	120	6	6	6.6	12.0	5.4	
6	SO-1	2nd. A.F. Push	15.0	200	14.0	180	40	40	18.0	22.0	4.0	
7	SO-1	2nd. A.F. Pull	15.0	200	14.0	180	40	40	18.0	22.0	4.0	

MODEL B31 25 Cycle
Schematic

SONORA PHONOGRAPH CO.



31, 33, 35 (A.C.)

- CX-380 2nd A.F.
- CX-345 2nd A.F.
- C-327 1st A.F.
- C-324 Det.
- C-324 3rd R.F.
- C-324 2nd R.F.
- C-324 1st R.F.
- Rect.

DATE	FOR	MODEL No	25 CYCLE
APPROVED	CIRCUIT DIAGRAM	BY	
DESIGNED	ACUSTIC PRODUCTS CO., INC.	CHECKED	
DRAWN		SCALE	
TESTED		QUANTITY	
FINISH		MATERIAL	
INSPECTED		TRACED	
		CHECKED	

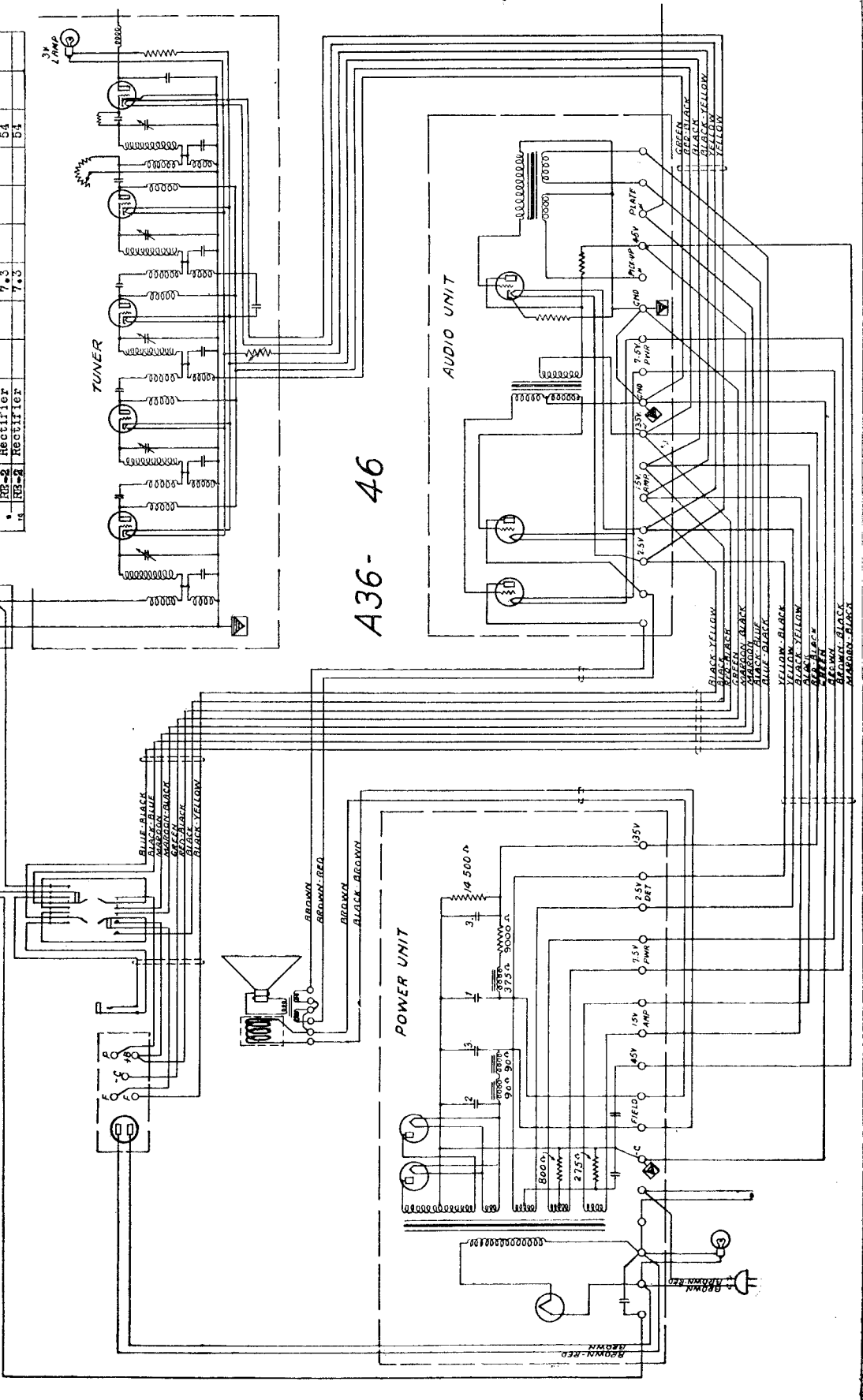
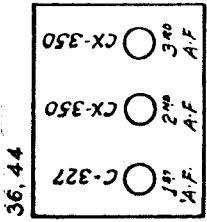
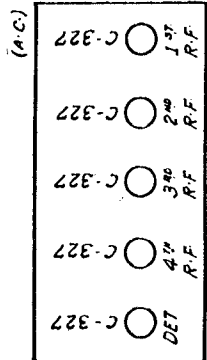
B 31
25 Cycle

SONORA PHONOGRAPH CO.

MODEL A36, A46
Schematic

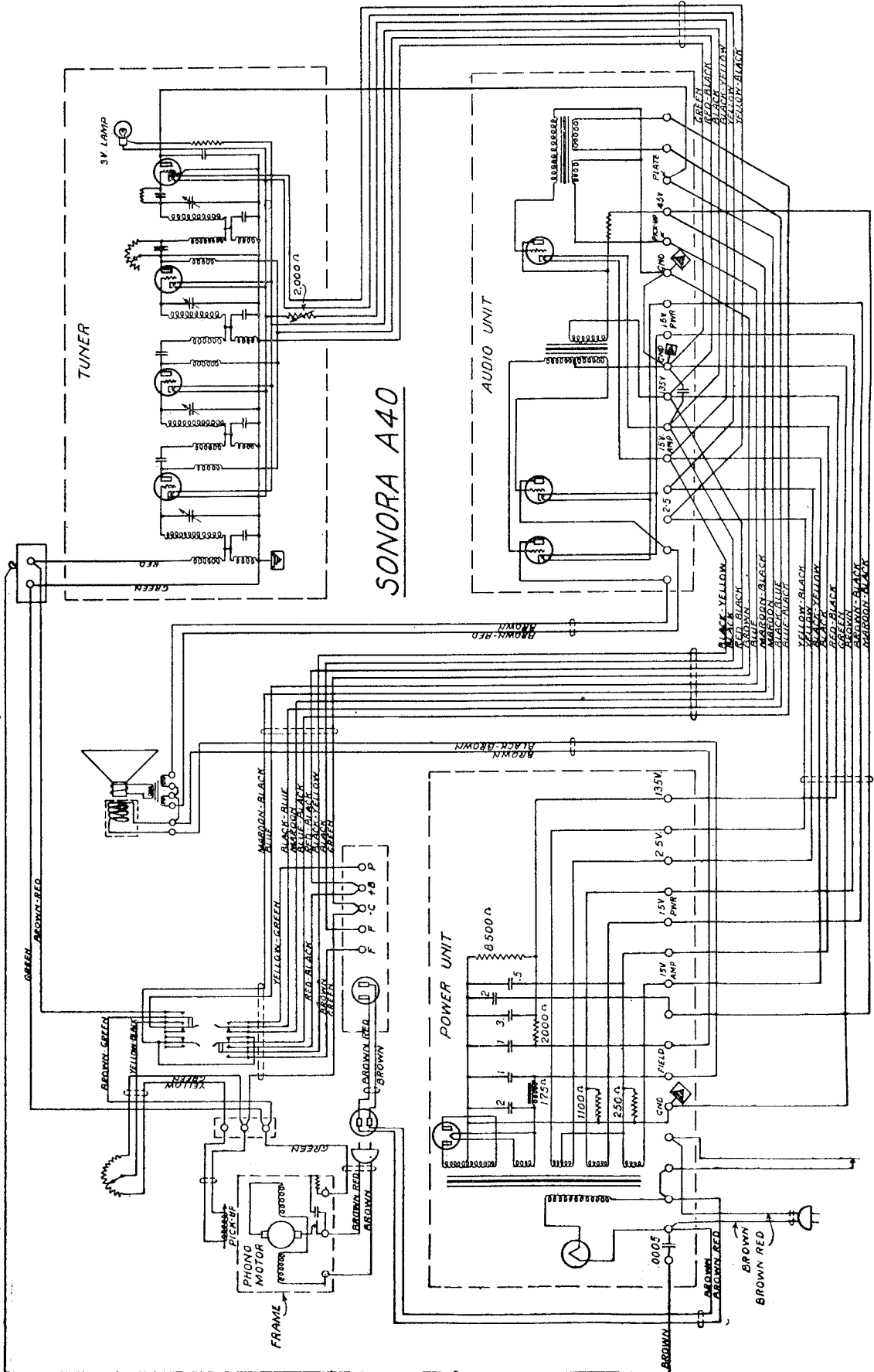
A36-46

TUBE NO. ORDER	TYPE OF TUBE	POSITION OF 1ST AF DET ETC	TUNE OUT		READINGS PLUS IN SOCKET OF SET		TUNE IN TESTS		PLATE M.A. GRD	PLATE TEST CHANGE
			VOLTS	MA	VOLTS	MA	CATHODE VOLTS	NORMAL MA		
1	RA-1	1st. R.F.	15.0	11.0	14.0	5	-	4.0	9.4	5.4
2	RA-1	2nd. R.F.	15.0	11.0	14.0	5	-	4.0	9.4	5.4
3	RA-1	3rd. R.F.	15.0	11.0	14.0	5	-	4.0	9.4	5.4
4	RA-1	4th. R.F.	15.0	11.0	14.0	5	-	4.0	9.4	5.4
5	DE-1	Detector	2.55	80	2.0	20	-	1.2	1.2	0
6	SO-2	5th. A.F. Push	7.5	420	7.0	400	70*	36	42	6.0
7	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
8	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
9	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
10	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
11	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
12	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
13	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0
14	RE-2	Rectifier	7.5	420	7.0	400	70	36	42	6.0



MODEL A40
Schematic

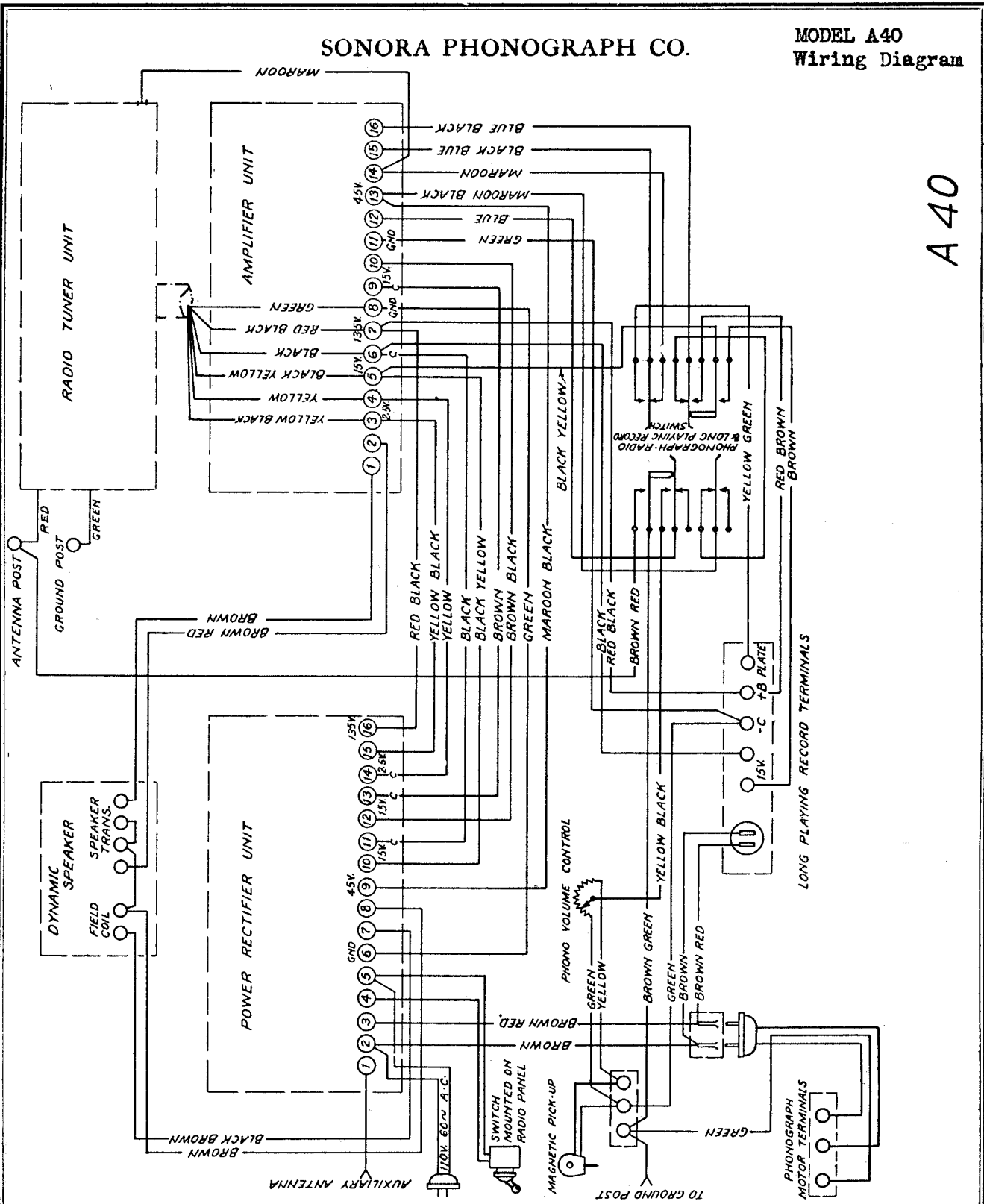
SONORA PHONOGRAPH CO.



SONORA PHONOGRAPH CO.

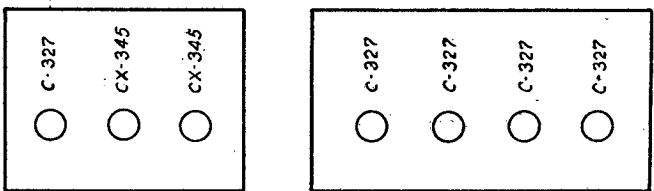
MODEL A40
Wiring Diagram

A 40



30, 32, 40

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, 2ND, 3RD, ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. CHG	PLATE M.A. CHANGE	
1	RA-1	1st. R.F.	15.0	136	14.0	130	6	6.6	12.0	5.4		
2	RA-1	2nd. R.F.	15.0	136	14.0	130	6	6.6	12.0	5.4		
3	RA-1	3rd. R.F.	15.0	136	14.0	130	6	6.6	12.0	5.4		
4	DE-1	Detector	2.5	88	2.1	20	6	6.6	3.0	0.2		
5	RA-1	1st. A.F.	15.0	130	14.0	120	6	6.6	12.0	5.4		
6	SO-1	2nd. A.F. Push	15.0	200	14.0	180	40	18.0	22.0	4.0		
7	SO-1	2nd. A.F. Pull	15.0	200	14.0	180	40	18.0	22.0	4.0		



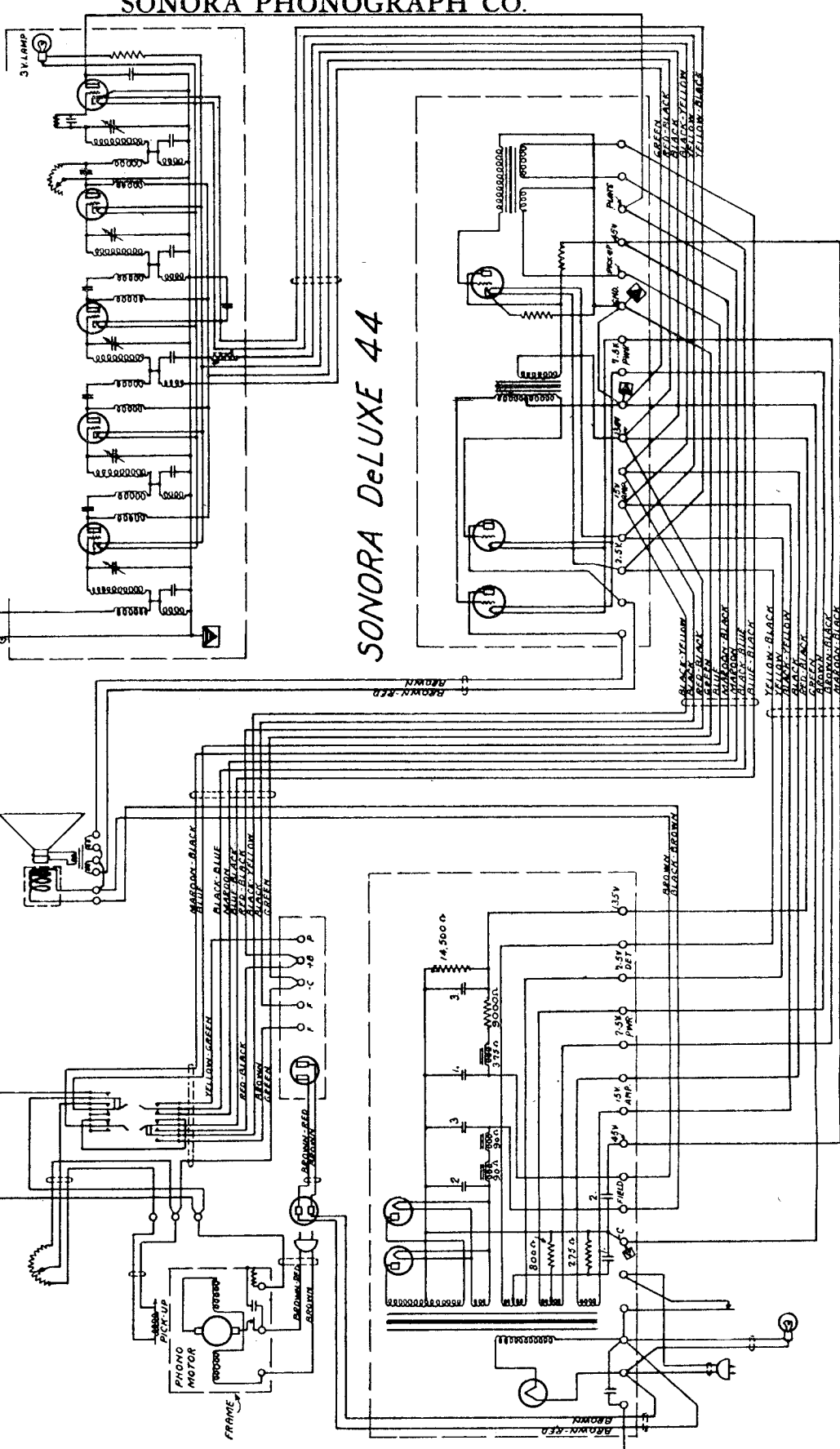
CX-380 USED IN SEPARATE POWER UNIT

MODEL De Luxe 44

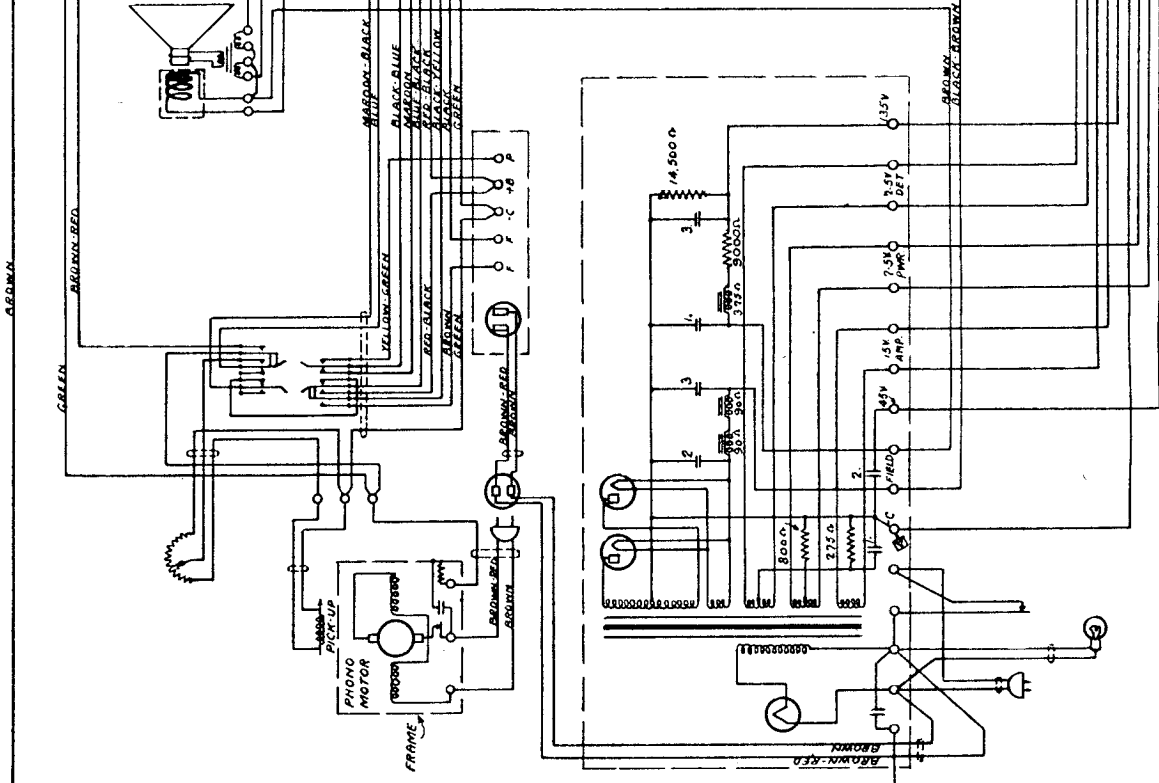
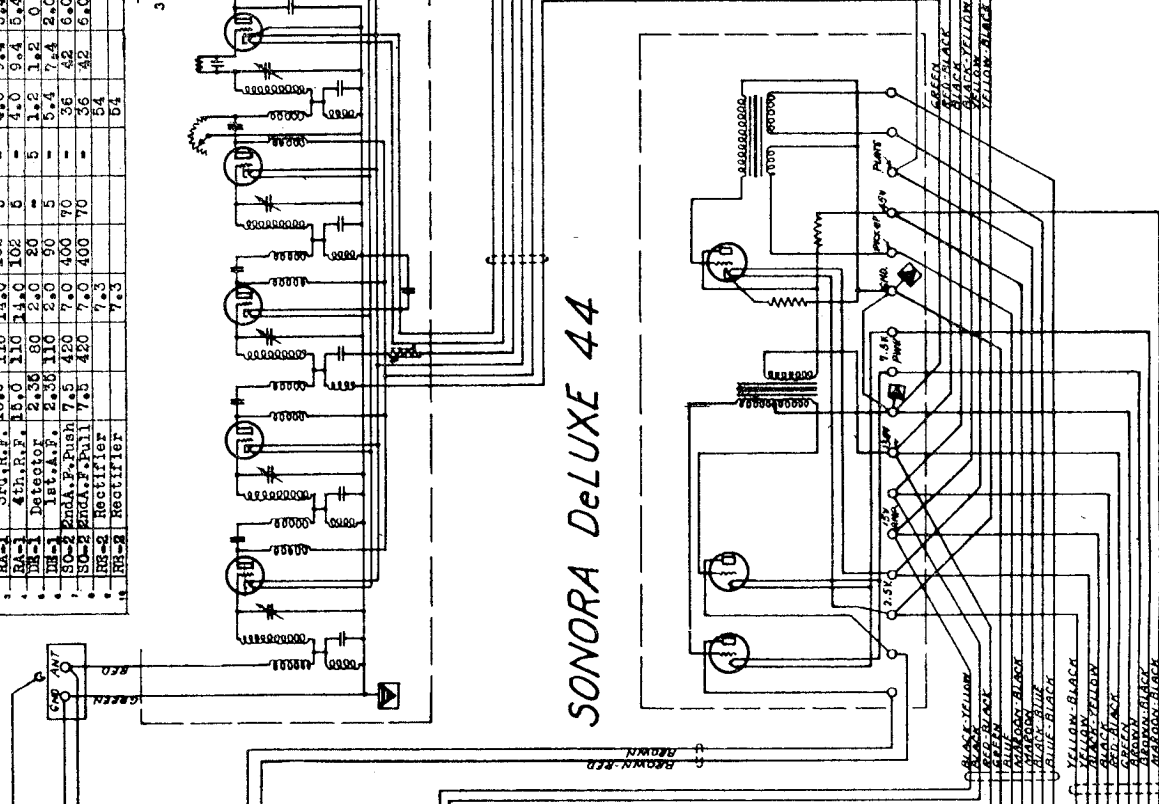
Schematic

SONORA PHONOGRAPH CO.

TUBE NO. IN SOCKET	TUBE TYPE	POSITION	TUBE OUT			TUBE IN TESTER			PLATE MA. GRID	PLATE TEST. CHARGE
			1	2	3	1	2	3		
1	6A5	1st R.F.	125	110	14.0	102	5	4.0	2.4	5.4
2	6A5	2nd R.F.	125	110	14.0	102	5	4.0	2.4	5.4
3	6A5	3rd R.F.	125	110	14.0	102	5	4.0	2.4	5.4
4	6A5	4th R.F.	125	110	14.0	102	5	4.0	2.4	5.4
5	6X5	Detector	236	80	2.0	20	5	1.2	1.2	0
6	6X5	1st A.F.	236	110	2.0	50	5	5.4	7.4	2.0
7	6X5	2nd A.F. Push	7.5	420	7.0	400	70	36	42	6.0
8	6X5	2nd A.F. Pull	7.5	420	7.0	400	70	36	42	6.0
9	6AR5	Rectifier	7.3	420	7.0	400	70	36	42	6.0
10	6AR5	Rectifier	7.3	420	7.0	400	70	36	42	6.0

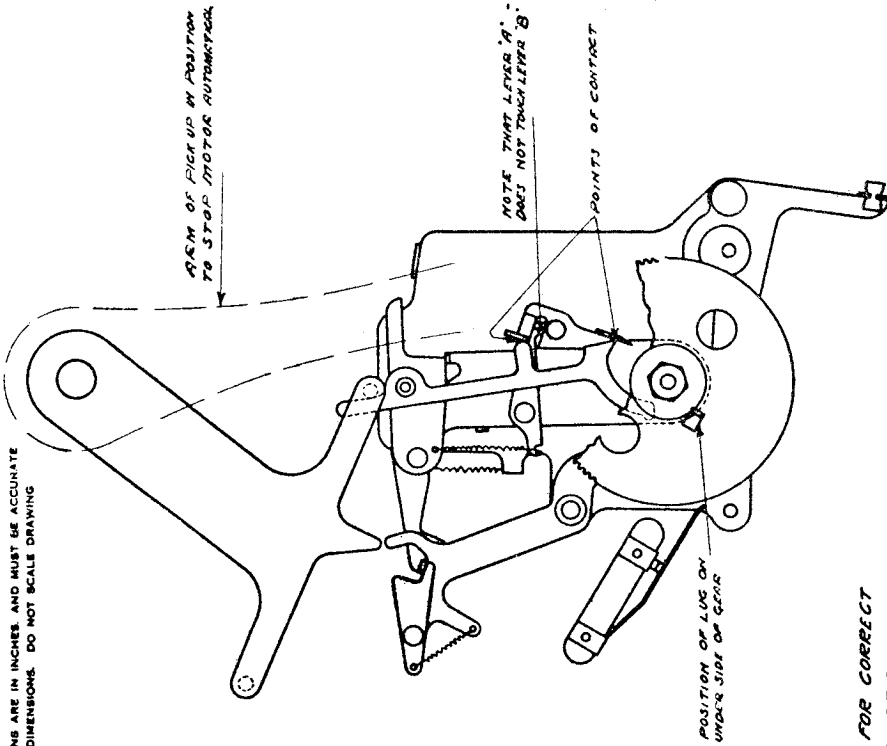


SONORA DeLUXE 44

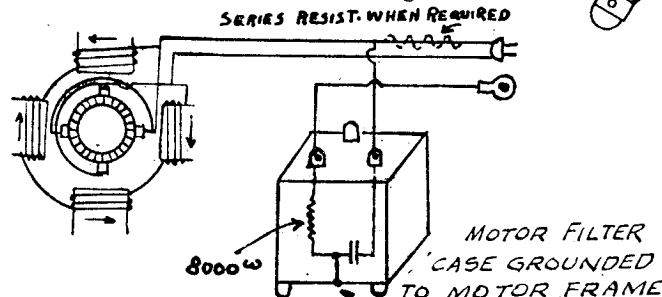
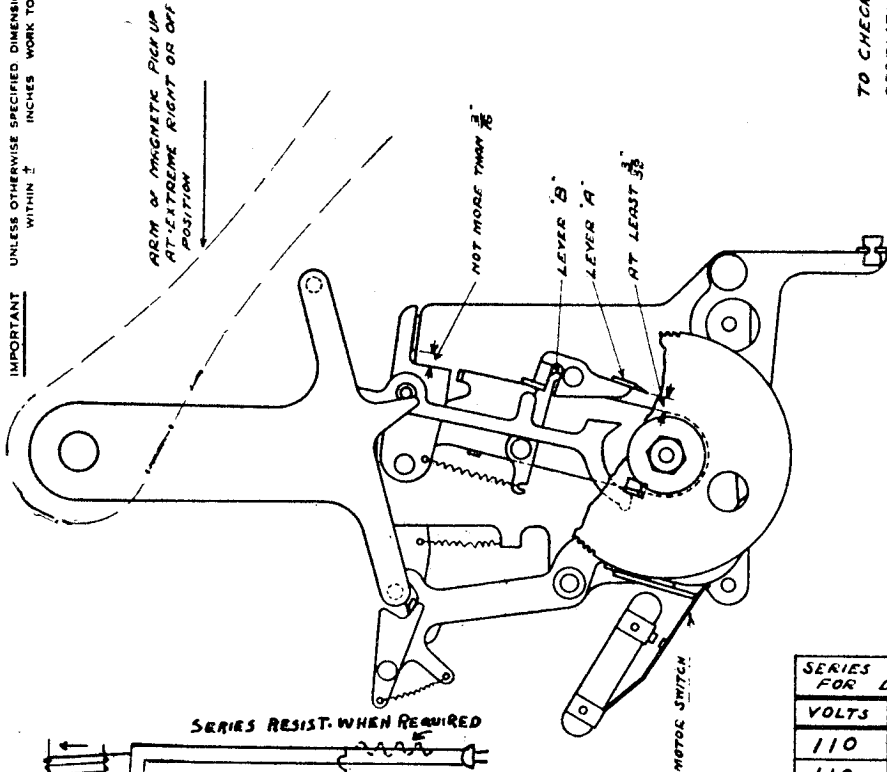


SONORA PHONOGRAPH CO.

MODEL 2M
Automatic Stop



TO CHECK FOR CORRECT ASSEMBLY OF AUTOMATIC STOP MECHANISM OF TYPE 2M MELODY MOTOR

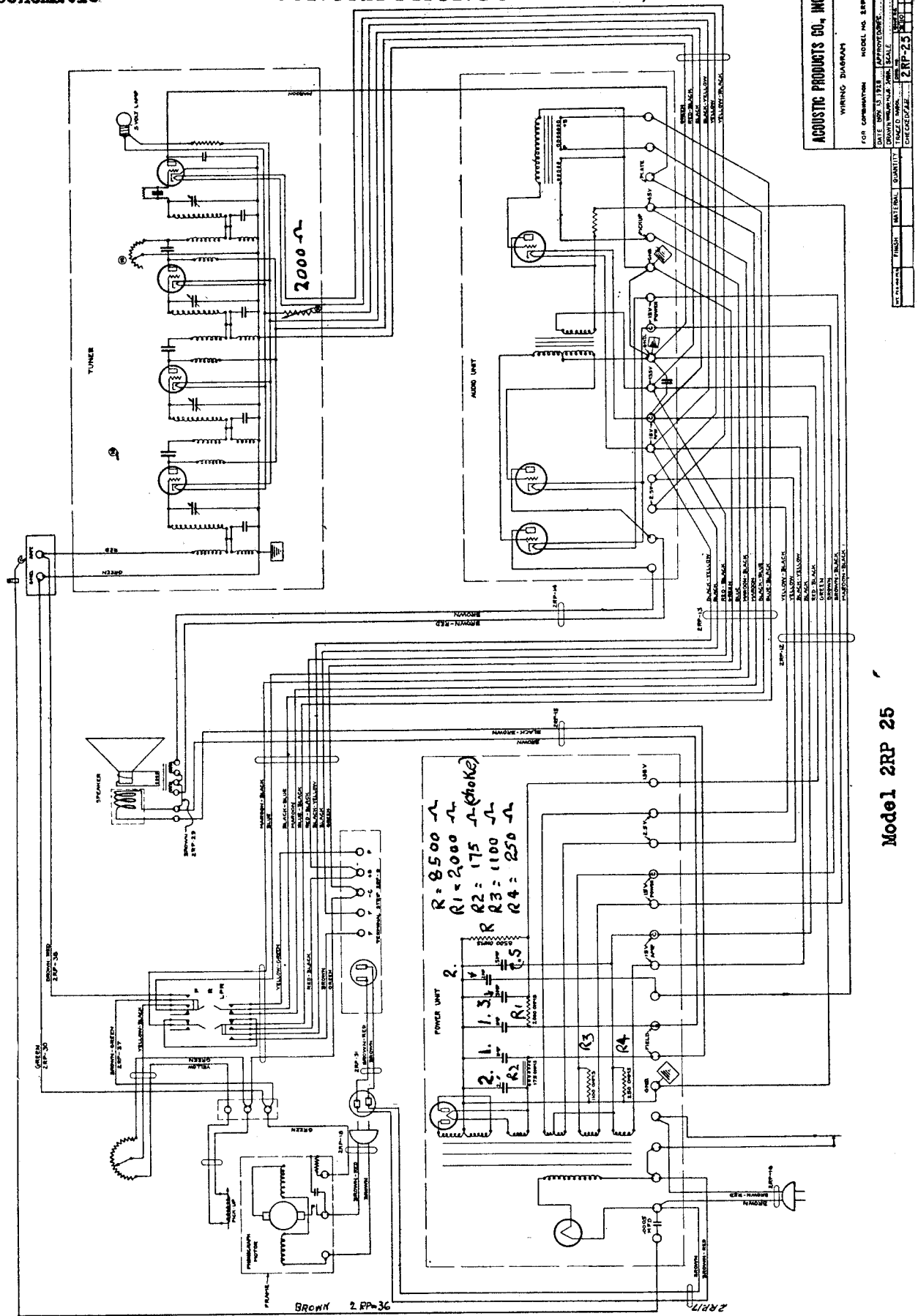


SERIES RESISTANCES REQUIRED FOR DIFFERENT VOLTAGES.			
VOLTS	CYCLES	OHMS	WATTS
110	60	NONE	
110	50	25	100
110	40	60	100
110	25	110	100
110	DC.	165	100
220	60	210	200
220	25	330	200
32	DC.	NONE	

MATERIAL AND SPECIFICATION		LENGTH PER UNIT		WEIGHT PER UNIT	
AUTOMATIC STOP MECHANISM OF TYPE 2M MOTOR		FIRST MADE FOR			
SONORA PHONOGRAPH CO. INC.		SCALE		PART NO.	
NEW YORK N.Y.					
DATE	BY	CHK'D BY	APPROVED BY	ED SERVICE DEPT DWG # 38	
12-24-32					

MODEL 2RP 25 Cycle
Schematic

SONORA PHONOGRAPH CO.,



ACUSTIC PRODUCTS CO., INC.

WIRING DIAGRAM

FOR COMPARISON MODEL NO. 2RP

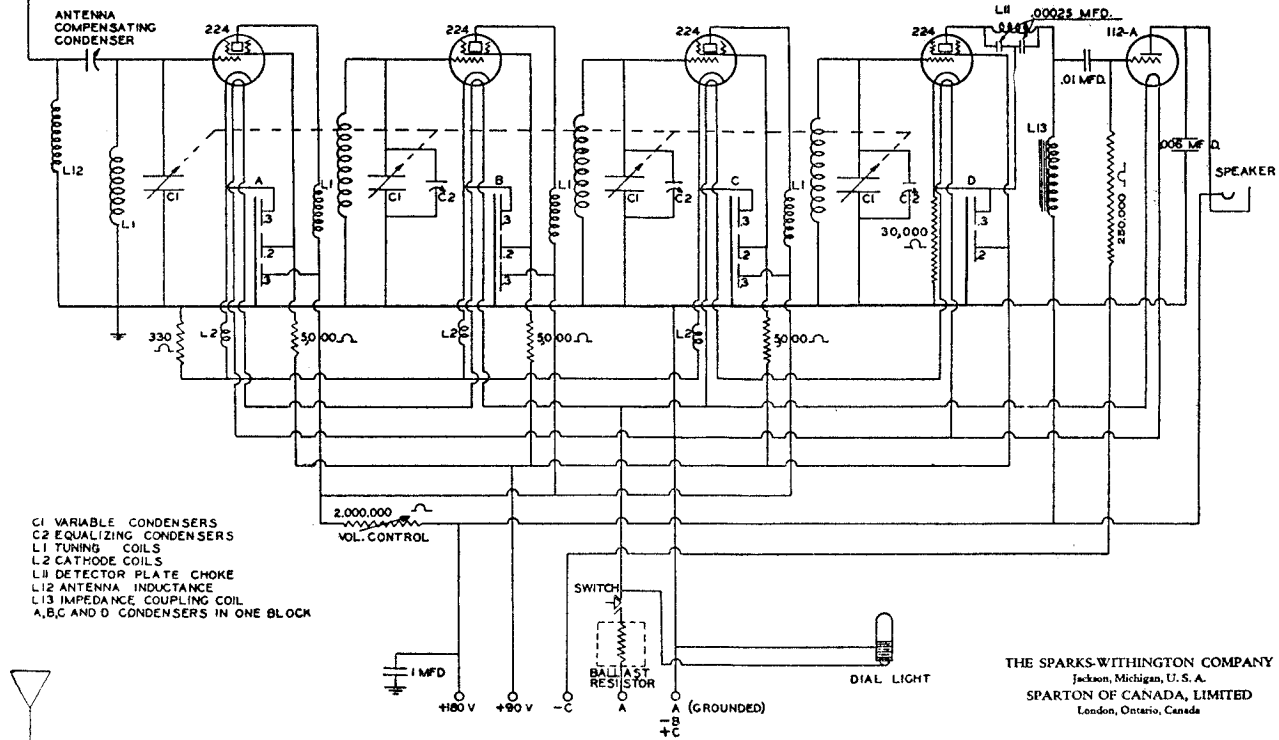
DATE 1935-12-18	APPROVED
DATE 1935-12-18	SCALE
DATE 1935-12-18	WORKS
DATE 1935-12-18	2RP-25
DATE 1935-12-18	2RP-25

Model 2RP 25

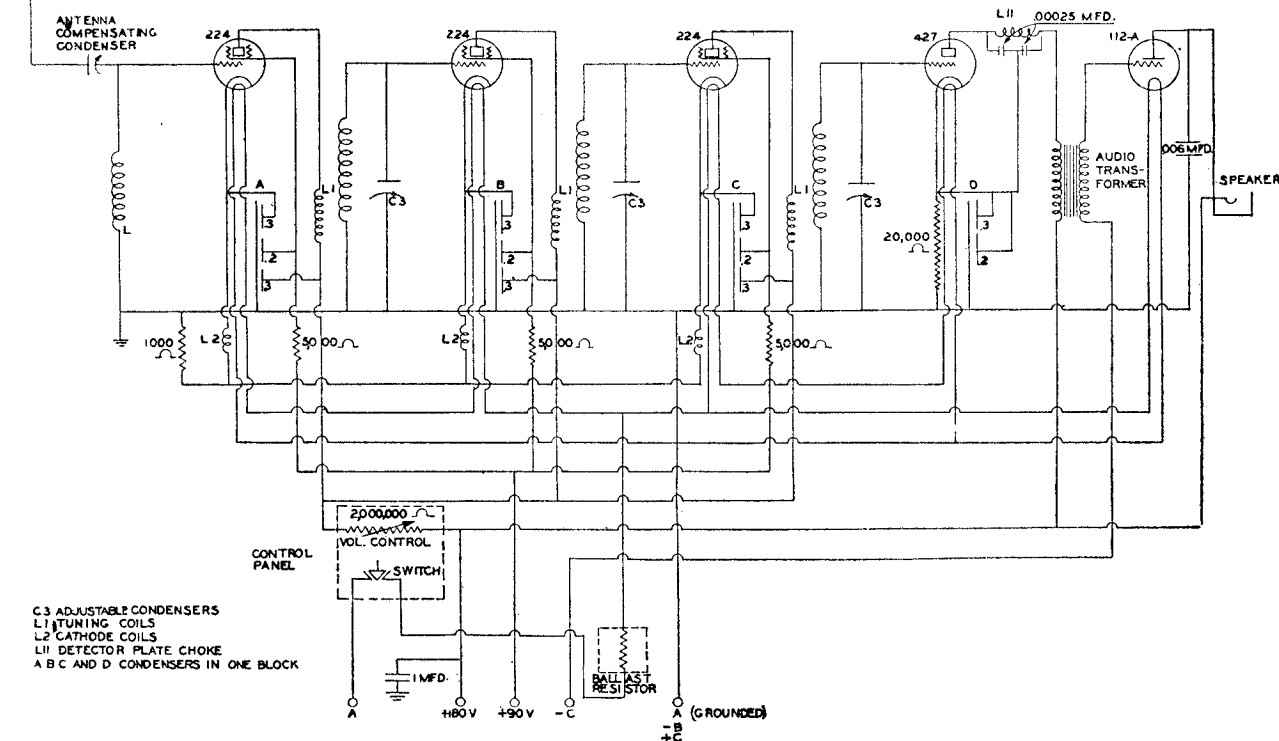
SPARKS WITHINGTON CO.

MODEL AR-19
MODEL AR-50
Schematic

MODEL A.R.-19



MODEL AR-50
POLICE AUTOMOBILE RADIO

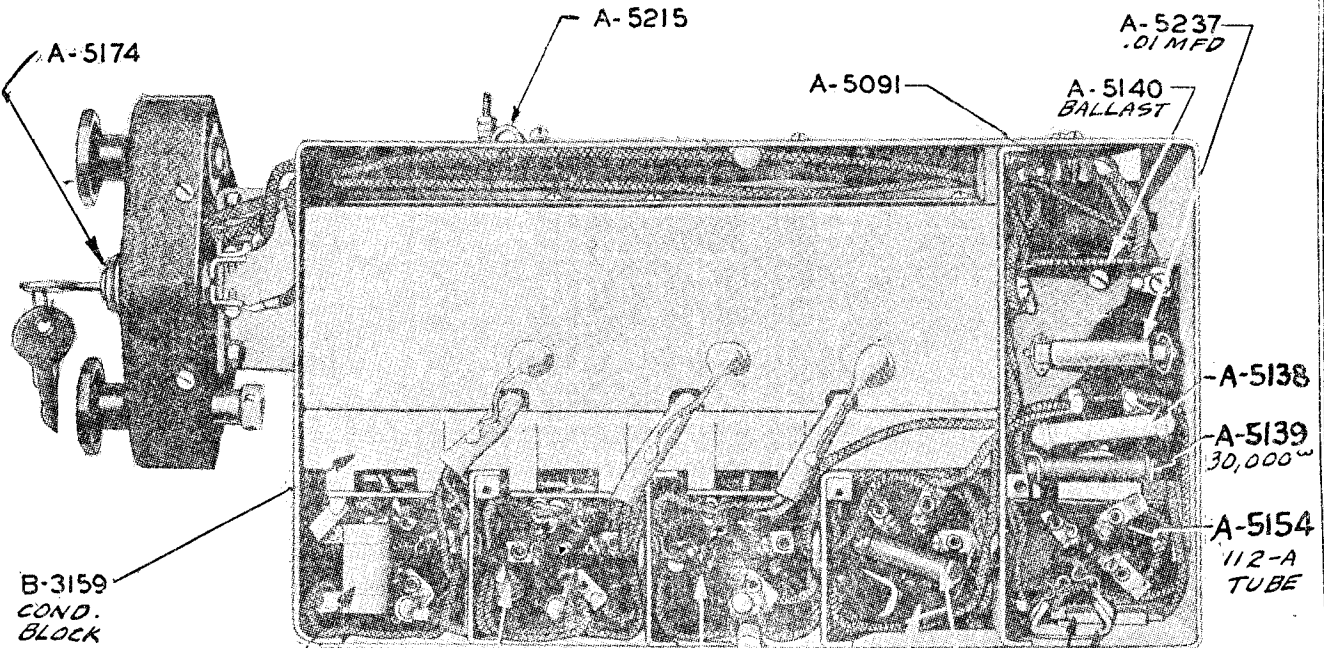
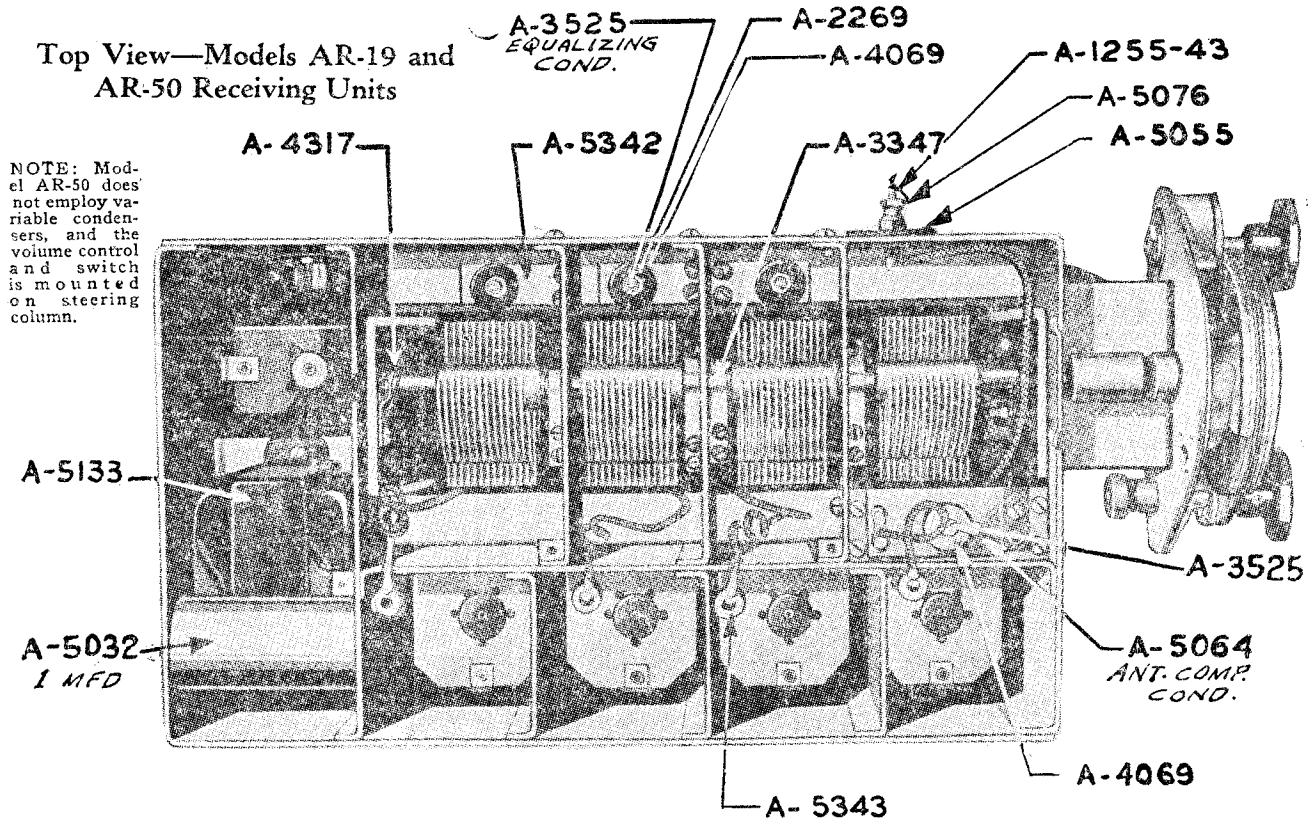


MODEL AR-19
 MODEL AR-50
 Chassis

SPARKS WITHINGTON CO.

Top View—Models AR-19 and
 AR-50 Receiving Units

NOTE: Model AR-50 does not employ variable condensers, and the volume control and switch is mounted on steering column.



Bottom View
 Models AR-19 and AR-50 Receiving Units

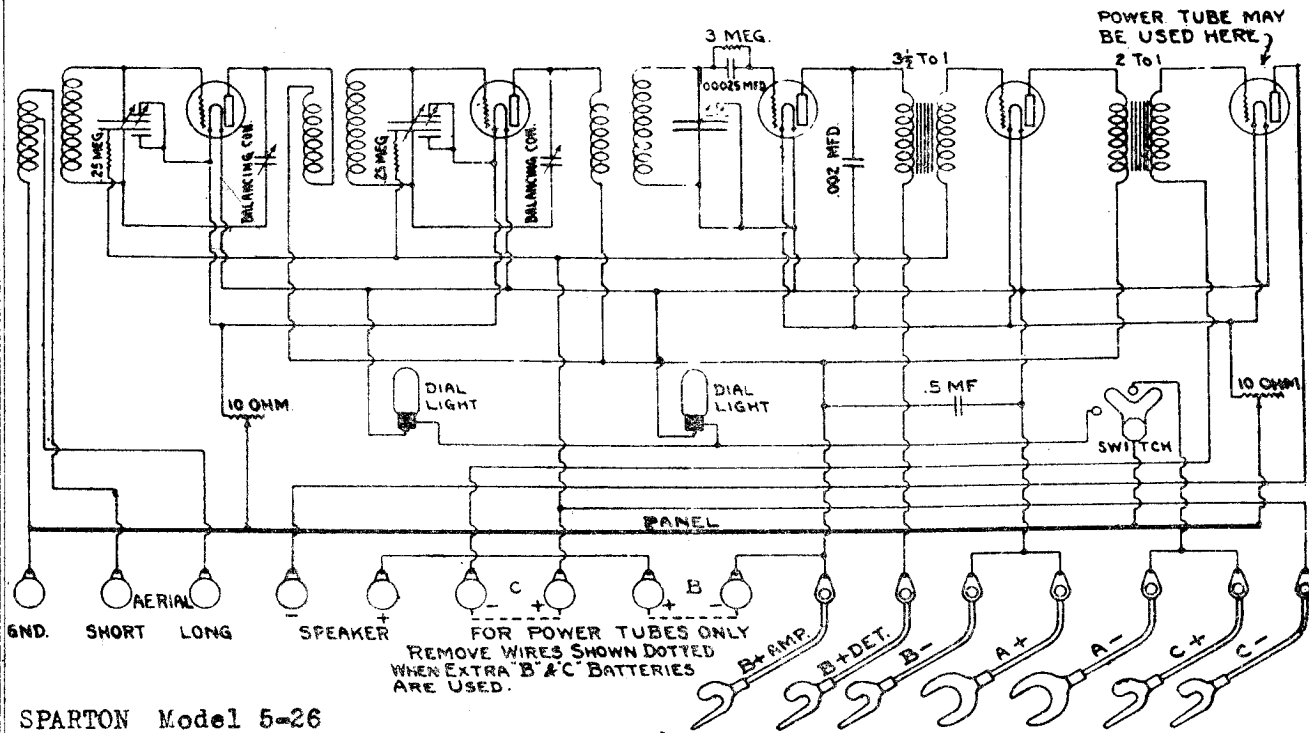
NOTE: In Model AR-50, A-5139 resistor is replaced with A-4261 resistor; A-5174 key switch is replaced with A-5903 toggle switch.

PART #A5217 FOR SPARK PLUG=.01 MFD
 PART #A5238 FOR GENERATOR=.01 MFD

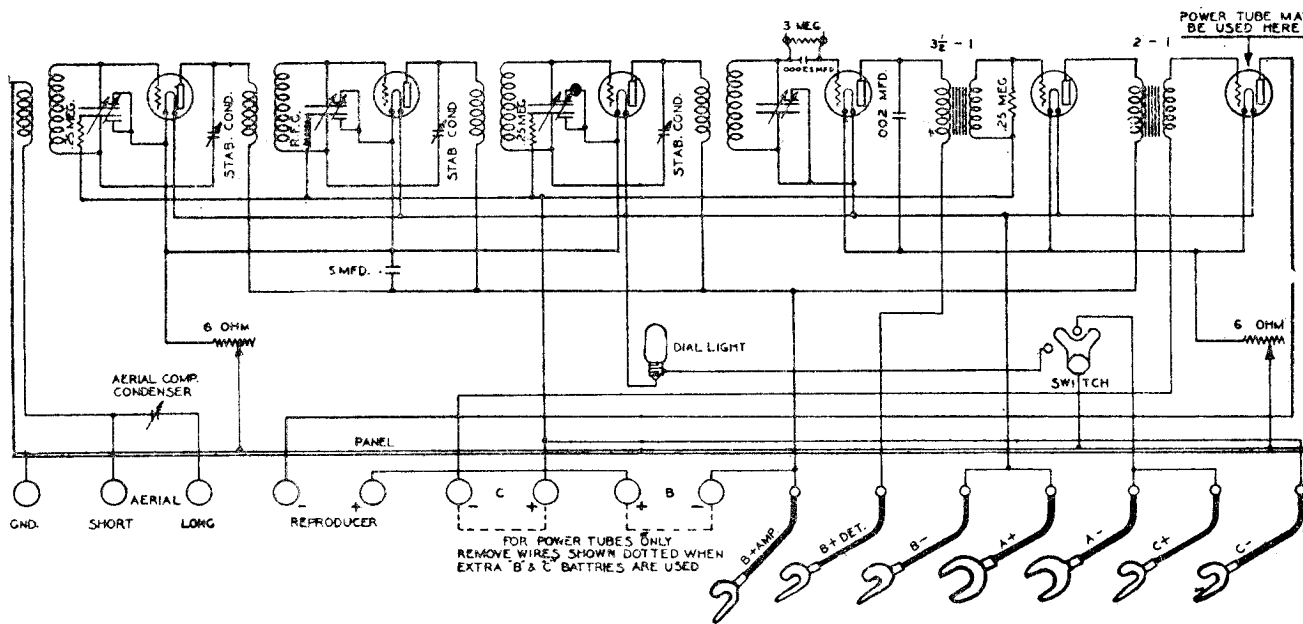
A-5175 .00025 MFD.
 A-5210 CHOKE (DET.)

SPARKS WITHINGTON, CO.

MODEL 5-15
 MODEL 5-26
 MODEL 6-15
 MODEL 6-26

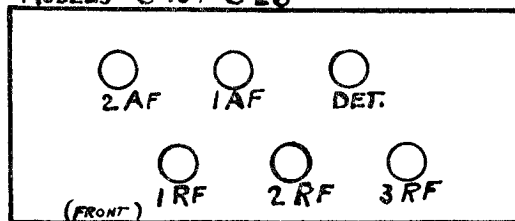


SPARTON Model 5-26
 (Model 5-15 same except for dial light.)



SPARTON MODEL 6-26
 MODEL 6-15 SAME EXCEPT FOR
 DIAL LIGHT & A.F. RHEOSTAT

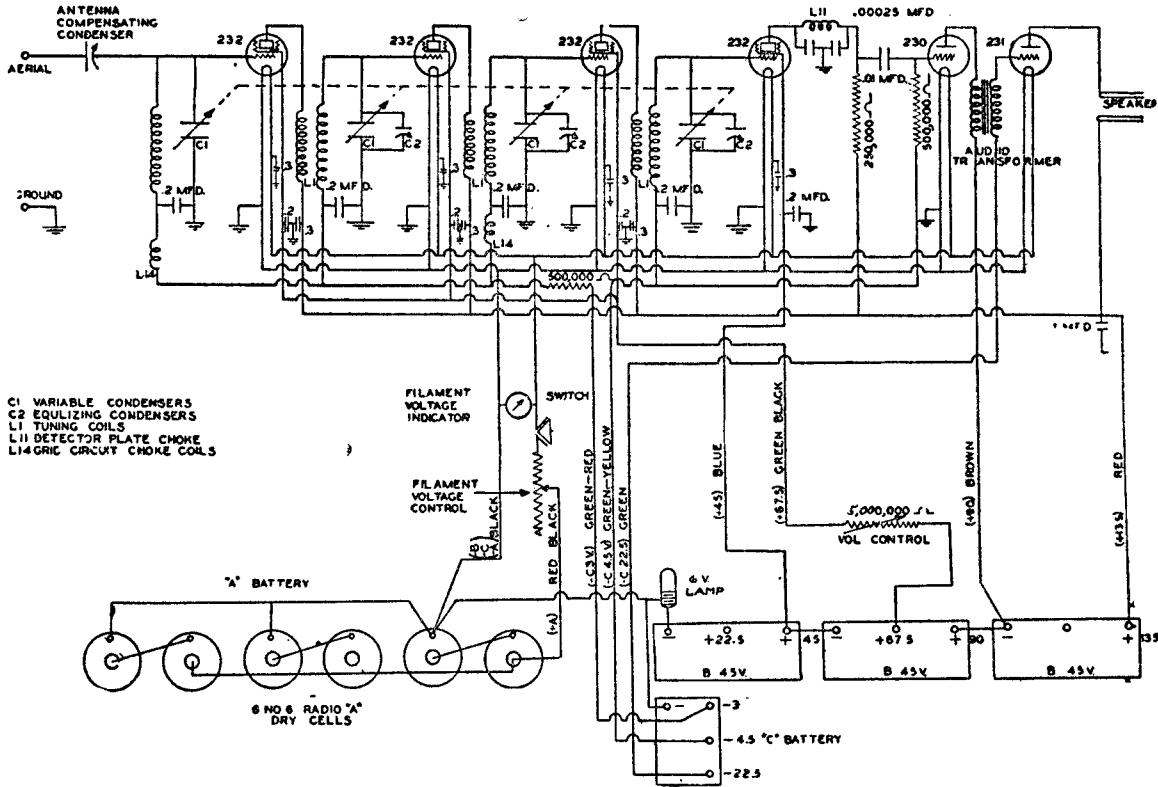
MODELS 6-15, 6-26



MODEL 31,32
MODEL 39
Schematic

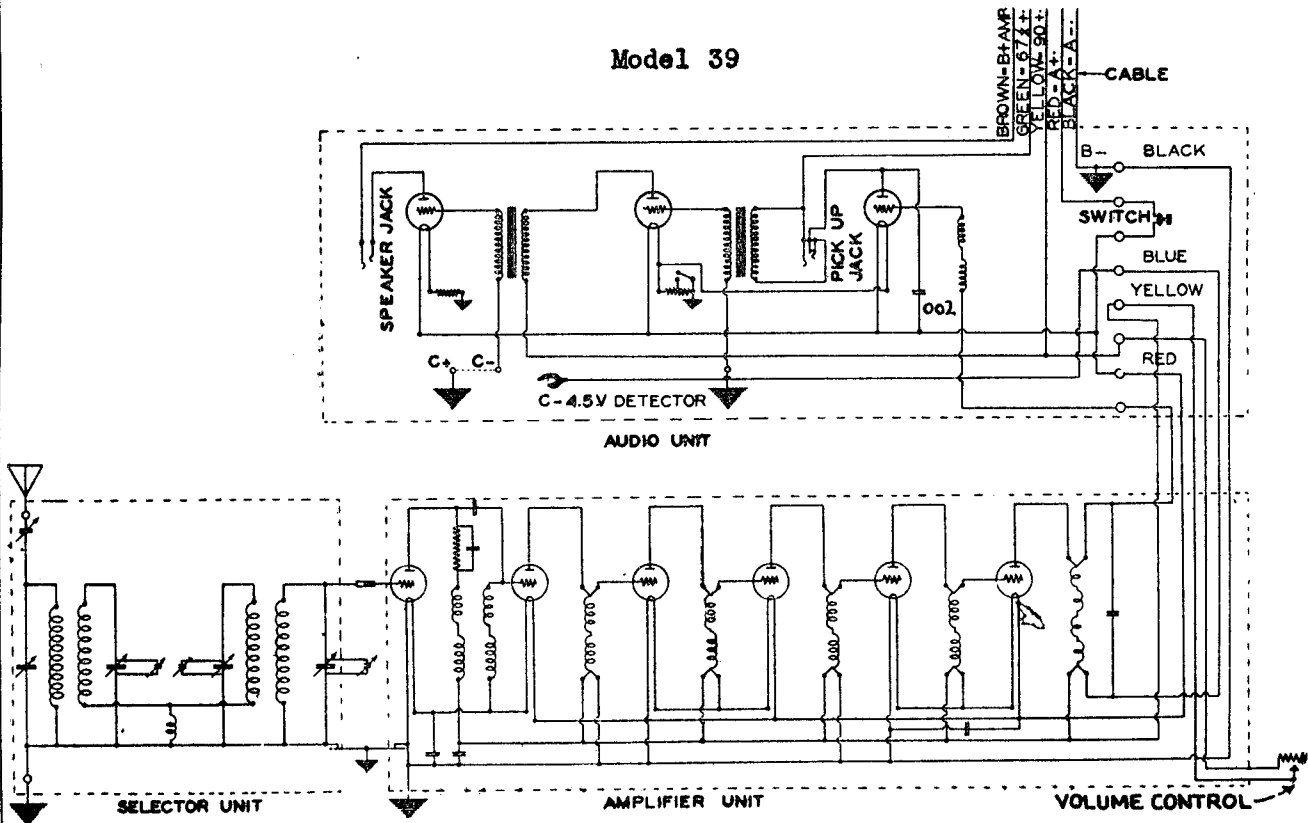
SPARKS WITHINGTON CO.

Model 31,32



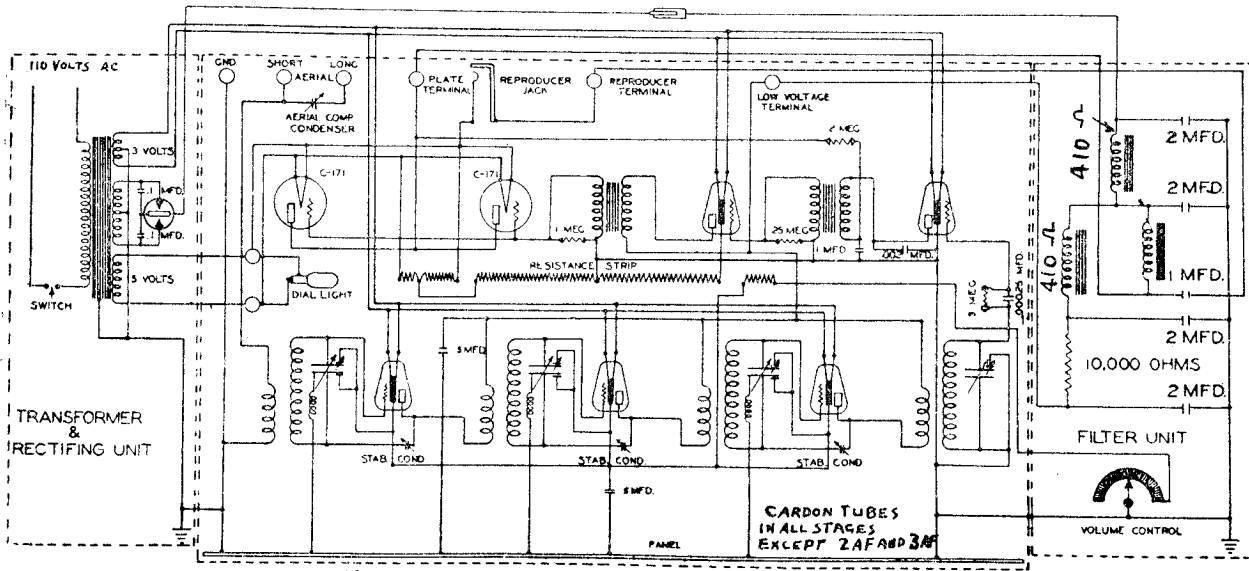
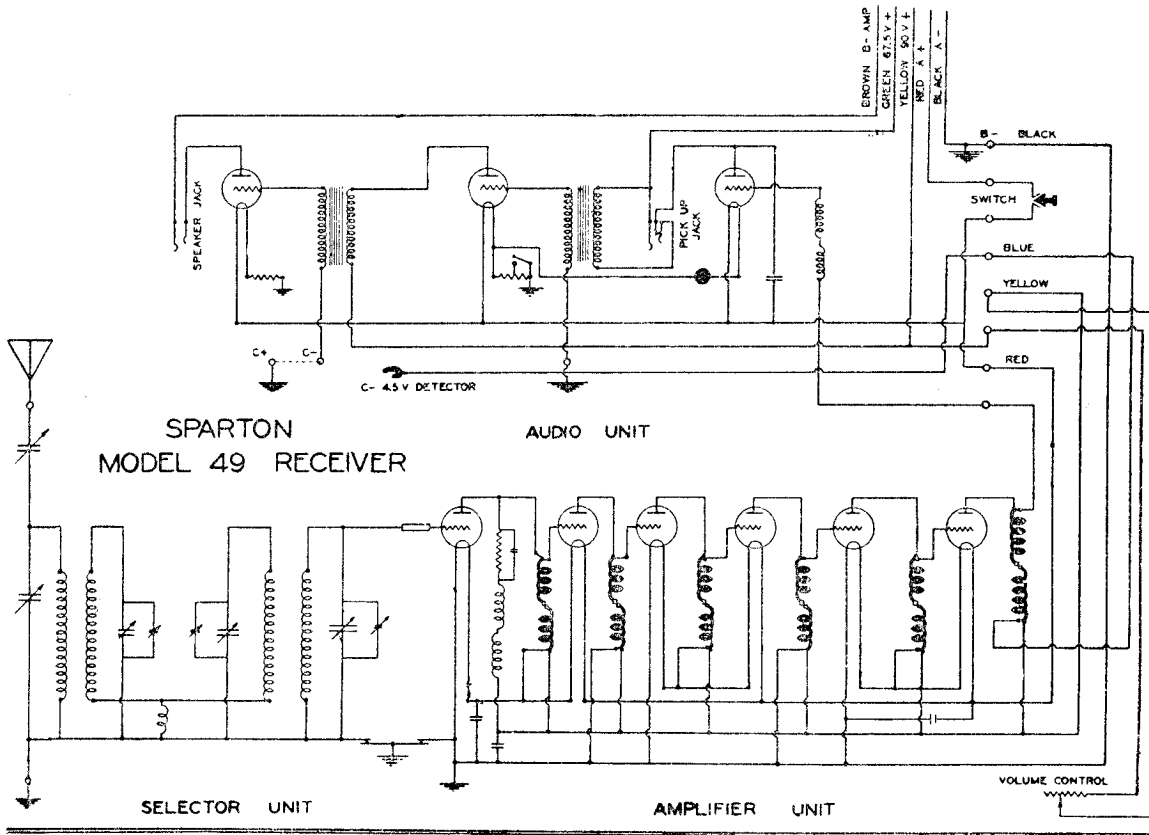
- C1 VARIABLE CONDENSERS
- C2 EQUALIZING CONDENSERS
- L1 TUNING COILS
- L11 DETECTOR PLATE CHOKE
- L14 GRID CIRCUIT CHOKE COILS

Model 39



SPARKS WITHINGTON CO.

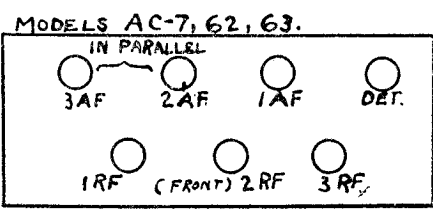
MODEL 49
MODEL AC-7, 62, 63
Schematic, Voltage



SPARTON AC 62, 62 and AC 7.

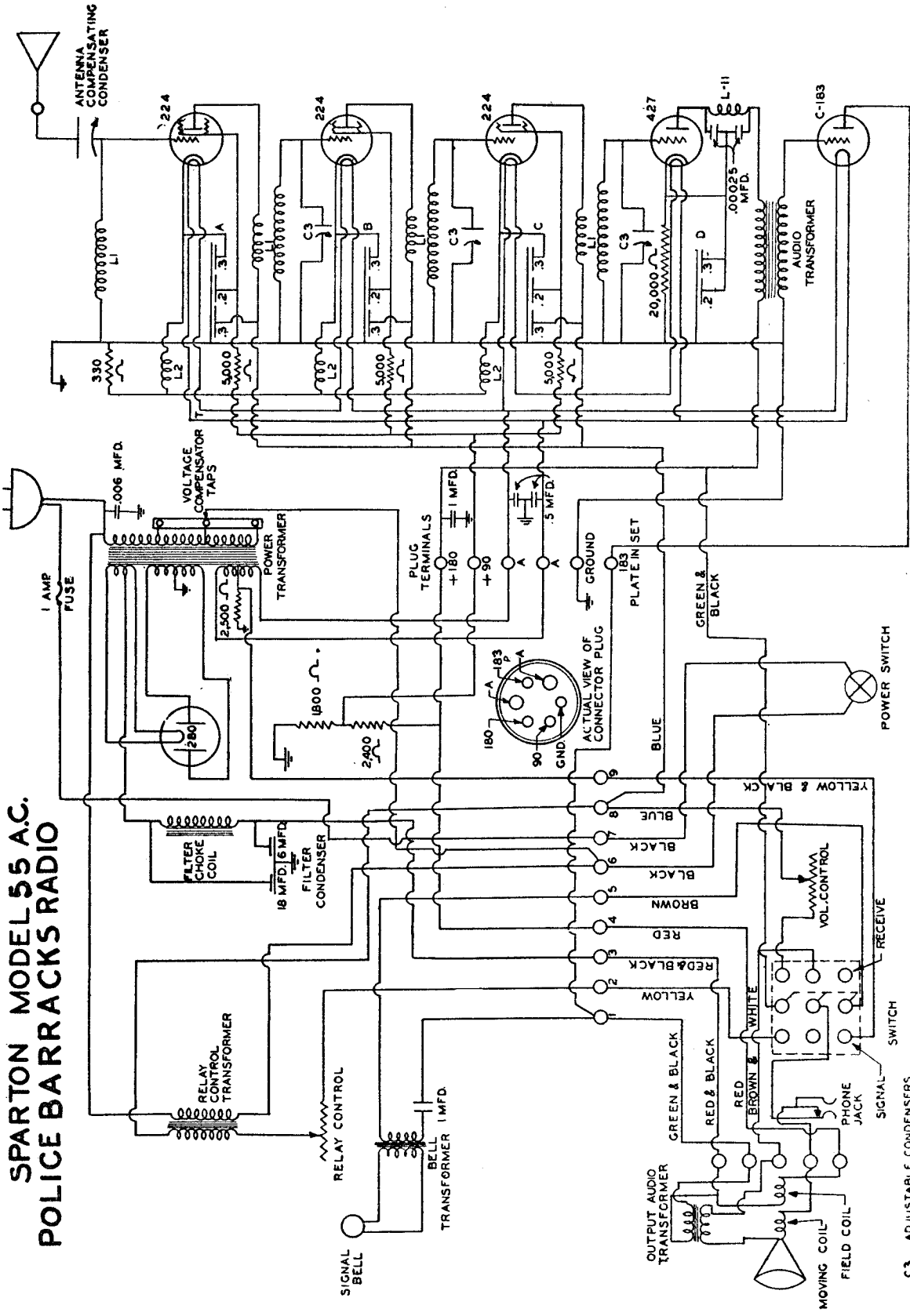
Tube	Fil.V.	Grid.V.	Plt.V.
1RF	3	2	150
2RF	3	2	150
3RF	3	2	150
Det	3	-	30
1AF	3	6	150
2AFP	5	40	210
3AFP	5	40	210

SPARTON AC-62-63&AC-7 RECEIVER



MODEL 65
Police Desk
Schematic

SPARKS WITHINGTON CO.
SPARTON OF CANADA LTD.



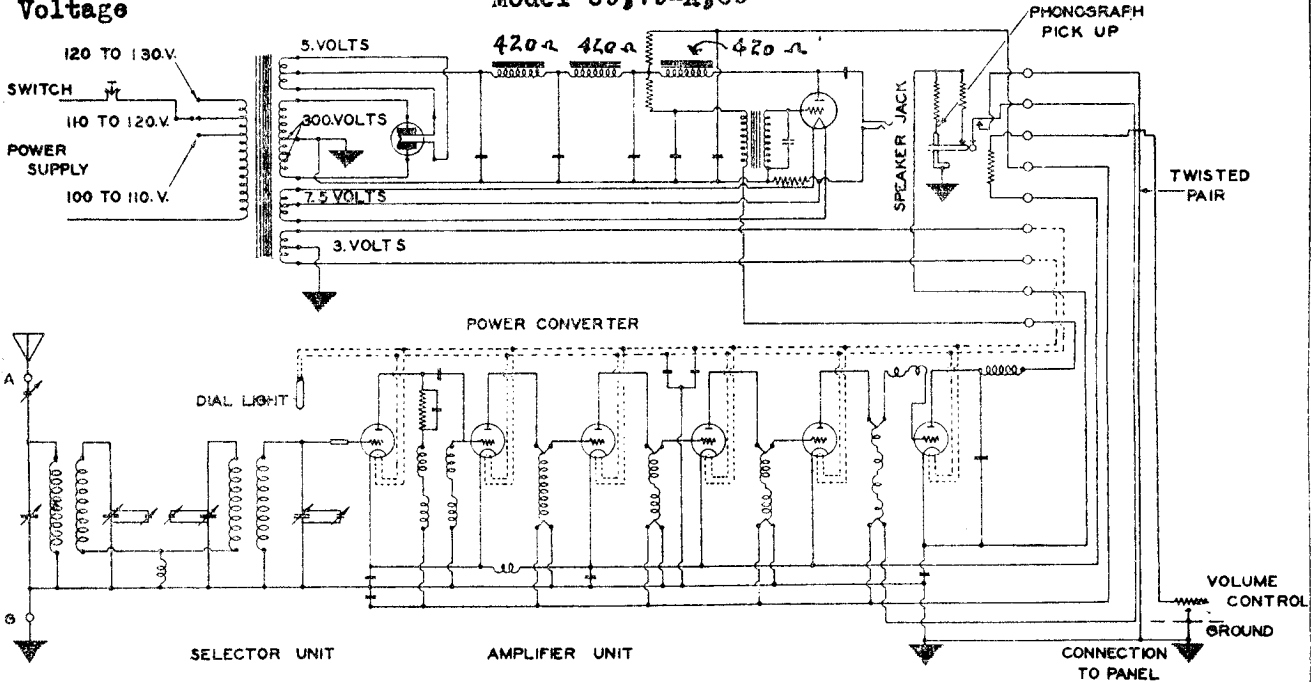
SPARTON MODEL 65 A.C.
POLICE BARRACKS RADIO

- C3 ADJUSTABLE CONDENSERS
- L1 TUNING COILS
- L2 CATHODE COILS
- L11 DETECTOR PLATE CHOKE
- A, B, C & D CONDENSERS IN ONE BLOCK

MODEL 69,79-A,89
Schematic
MODEL 89-A
Schematic
Voltage

SPARKS WITHINGTON CO.

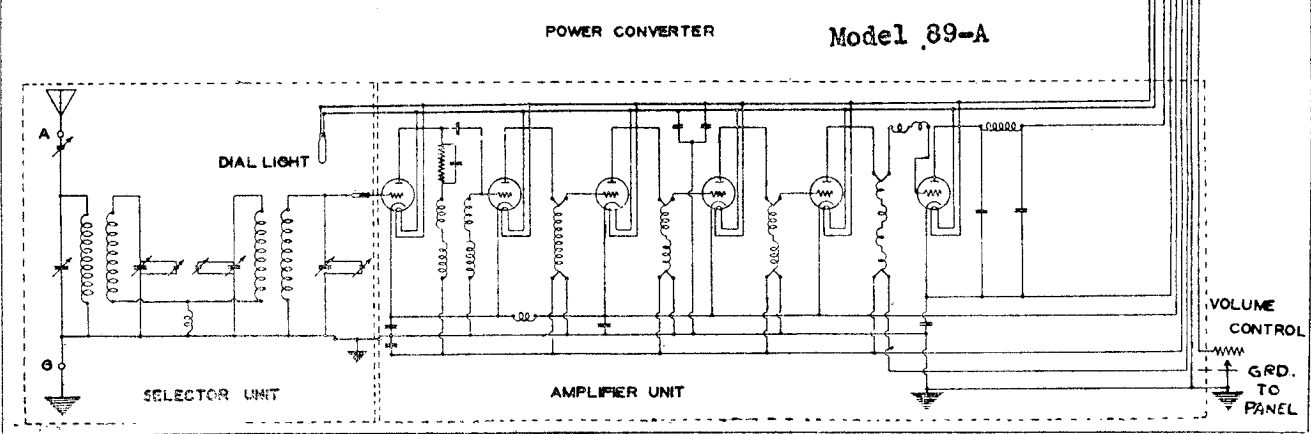
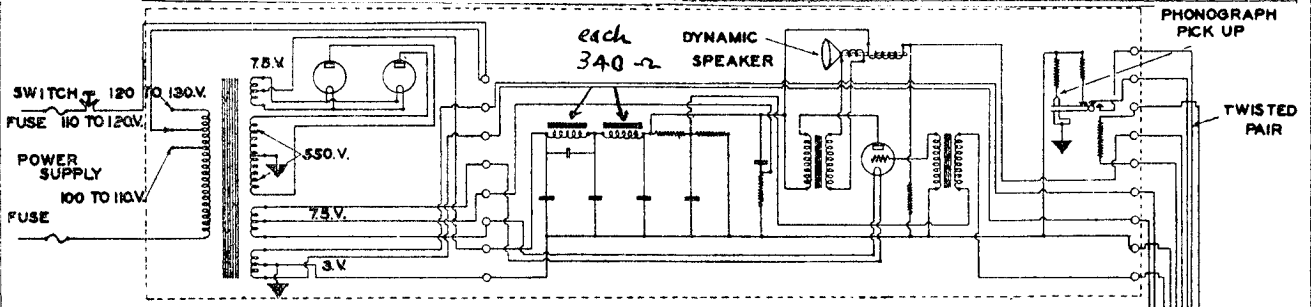
Model 69,79-A,89



SPARTON—Model 79-A-89 - 69
Line Voltage 120—Volume Control Full

SPARTON—Model 89-A
Line Voltage 120—Volume Control Full

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. R.F. DET. ETC.	READINGS, PLUG IN SOCKET OF SET										
			TUBE OUT					TUBE IN TESTER					
A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS CONTROL	CATHODE HEATER VOLTS	NORMAL PLATE M.A. TEST	PLATE CHANGE M.A. TEST	PLATE SCREEN GRID VOLTS	CATHODE HEATER VOLTS	NORMAL PLATE M.A. TEST	PLATE CHANGE M.A. TEST	PLATE SCREEN GRID VOLTS	
1	C-484	1st RF	3.2	158	3	128	9	7.4	10.5	3.6			
2	C-484	2nd RF	3.2	160	3	158	9	7.8	13.	5.2			
3	C-484	3rd RF	3.2	158	3	158	9	5.5	10.8	5.3			
4	C-484	4th RF	3.2	160	3	158	9	7.9	14.4	6.5			
5	C-484	5th RF	3.2	160	3	158	9	7.4	13.2	5.8			
6	C-484	Det.	3.2	245	3	220	10	1.7	6.	4.3			
7	585	P. Aud.	7.5	310	7.4	220	38	25	29	4			
8	280	Rect.	5.5	-	5.1	-	-	28	-	-			



Resistor Data

SPARKS WITHINGTON CO.

STANDARD RESISTOR COLOR CODE AND RESISTORS USED IN SPARTON RADIO RECEIVING SETS AND SPARTON ENSEMBLES

Standard Resistor Color Code

- | | |
|----------|----------|
| 0—Black | 5—Green |
| 1—Brown | 6—Blue |
| 2—Red | 7—Violet |
| 3—Orange | 8—Gray |
| 4—Yellow | 9—White |

To determine the value of a resistor, the first significant figure of resistance value is represented by the color of the body of the resistor, and the second

figure of resistance value by the color of the tip of the resistor. The number of ciphers following the second figure is determined by the color of the dot or stripe in the center of the body of the resistor. For example, a 20,000 ohm resistor has a red body, black tip, with orange dot or orange stripe. A 2,200 ohm resistor would be red body, with red tip and red dot, or red stripe, and as all colors are the same, it would be a single color resistor.

CARBON RESISTORS

Part No.	Ohms	Watts	Body	Tip	Dot Stripe
B-4114-11	200	.5	Red	Black	Brown
B-4114-3	250	.5	Red	Green	Brown
B-4114-1	500	.5	Green	Black	Brown
B-4114-13	1,000	.5	Brown	Black	Red
A-3397	1,000	2	Light Brown		
A-3397	1,000	2	Brown	Black	Red
A-3750	1,250	3	Brown	Orange	Red
A-3750	1,250	3	Black	Silver	Orange
A-3750	1,250	3	Black		
A-3750	1,250	3	Slate		
A-3325	1,700	2	Dark Brown		
A-3639	1,700	5	Gray	Silver	
A-4613	1,700	1	Brown	Violet	Red
A-5550	2,000	.5	Red	Black	Red
B-4114-6	Use A-5550				
A-5622	2,500	3	Red	Green	Red
A-3232	2,800	.5	Black	Paper Label	
A-4122	2,800	.5	Gray		
A-4122	2,800	.5	Red		
A-4653	2,800	.5	Red	Gray	Red
A-5180	5,000	.5	Green	Black	Red
B-4114-16	Use A-5180				
B-4114-20	Use A-5180				
B-4114-25	7,000	.5	Violet	Black	Red
B-4114-2	8,000	.5	Gray	Black	Red
A-3764-C	10,000	4	Blue		
A-3735	10,000	5	Brown	Black	Orange
A-3735	10,000	5	Gray	Silver	Blue
A-4614	10,000	1	Brown	Black	Orange
B-4114-7	10,000	.5	Brown	Black	Orange
B-4114-5	10,000	.3	Brown	Black	Orange
A-4107	15,000	5	Brown	Green	Orange
A-4107	15,000	5	Gray	Silver	
B-4114-23	15,000	.5	Yellow	Black	Orange
A-2934	20,000	2	Green		
A-2934	20,000	2	Red	Black	Orange
A-3422	20,000	3	Gray		Green
A-3422	20,000	3	Red	Black	Orange
A-4261	20,000	5	Red	Black	Orange
A-4261	20,000	5	Gray	Silver	Blue
B-4114-14	20,000	.5	Red	Black	Orange
B-4114-24	Use B-4114-14				
A-7111	25,000	4.5	Red	Green	Orange

SPARKS WITHINGTON CO.

Resistor Data

CARBON RESISTORS—Continued

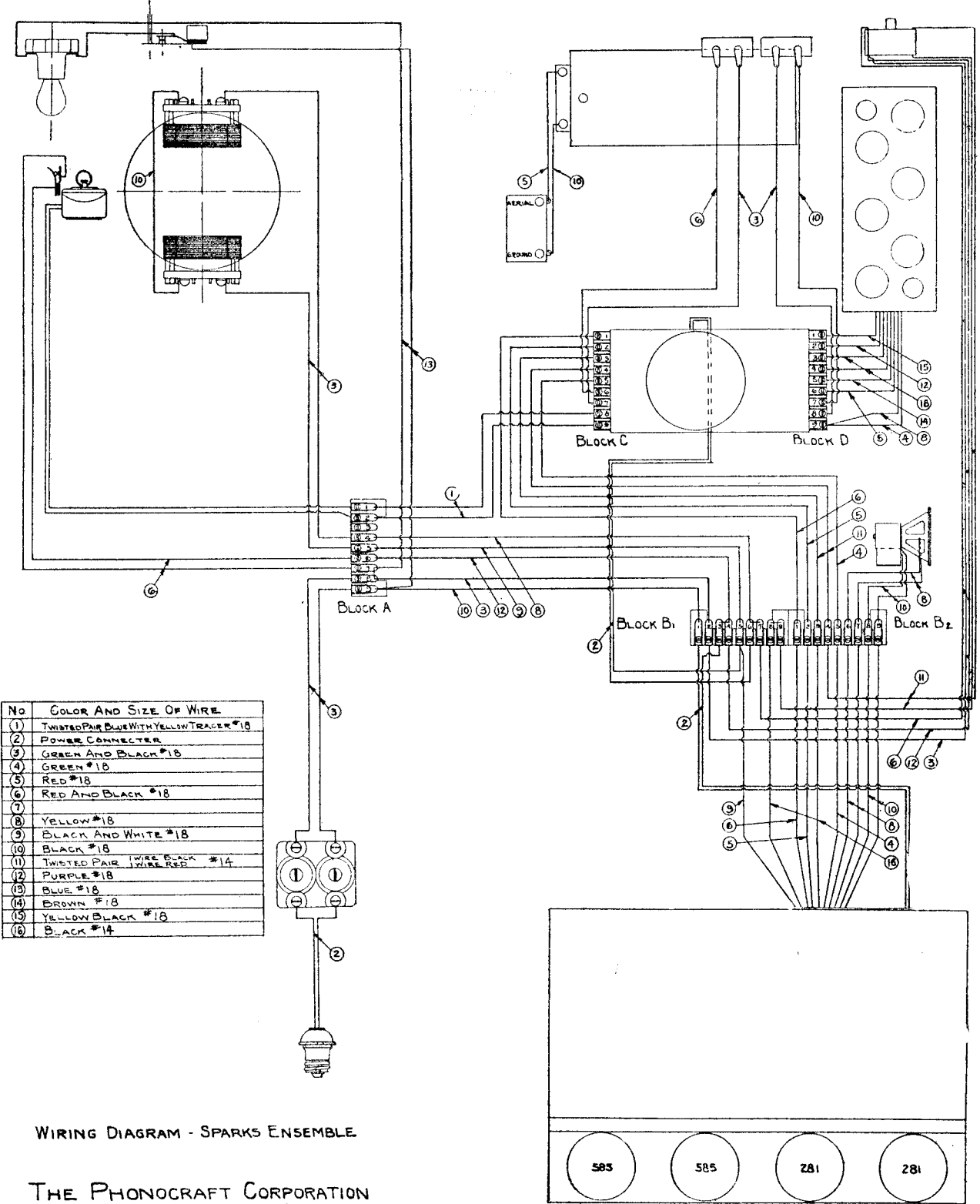
Part No.	Ohms	Watts	Body	Tip	Dot Stripe
B-4114-18	25,000	.5	Red	Green	Orange
A-5139	30,000	1	Orange	Black	-----
B-4114-19	30,000	.5	Orange	Black	Orange
B-4114-22	40,000	.5	Yellow	Black	Orange
A-3423	50,000	3	Gray	-----	Red
A-3423	50,000	3	Green	Black	Orange
B-4114-12	50,000	.5	Green	Black	Orange
B-4114-15	60,000	.5	Blue	Black	Orange
A-5354	100,000	1	Brown	Black	Yellow
B-4114-10	100,000	.5	Brown	Black	Yellow
B-4114-8	150,000	.5	Brown	Green	Yellow
A-2702-5	200,000	-----	Glass	-----	-----
B-4114-17	200,000	.5	Red	Black	Yellow
A-1514	250,000	-----	Glass	-----	-----
A-4234	250,000	1	Red	Green	Yellow
A-5270	Use A-4234	-----	-----	-----	-----
B-4114-4	250,000	.5	Red	Green	Yellow
A-2702-6	Use A-1514	-----	-----	-----	-----
A-5269	500,000	1	Green	Black	Yellow
B-4114-9	500,000	.5	Green	Black	Yellow
A-5138	1,000,000	1	Brown	Black	Green
B-4114-21	1,000,000	.5	Brown	Black	Green
A-2702-11	1,000,000	-----	Glass	-----	-----
A-1515	3,000,000	-----	Glass	-----	-----
A-2702-13	Use A-1515	-----	Glass	-----	-----

WIRE WOUND RESISTORS

Part No.	Ohms	Watts	Color	Type	Part No.	Ohms	Watts	Color	Type
A-7411	.43	-----	-----	Special	A-7118	250	1	Blue	Wire Wound
A-6890	.54	2.5	5-23/32"	Wire	A-5137	330	1	Gray	Wire Wound
A-6889	.67	2.5	7-7/64"	Wire	A-3536	900	10	Black	Wire Wound
A-5863	2	5	Blue	Wire Wound	A-7119	1,050	7.5	Blue	Wire Wound
A-4363	7	20	Blue	Wire Wound	A-7018	1,250	4	-----	Candohm
A-7509	8-9	-----	-----	Wire Wound	A-4974	1,250	5	Gray	Candohm
A-5140	(.11 ohms	per ft.	at 20° C.)	Wire	A-6617	1,500	2	Brown	Braided
A-5862	12	10	Blue	Wire Wound	A-3383	3,000	10	Black	Wire Wound
A-4364	12	30	Blue	Wire Wound	A-3535	7,000	10	Black	Wire Wound
A-5890	14	10	Blue	Wire Wound	A-4583	Use A-3535	-----	-----	-----
A-4366	15	50	Blue	Wire Wound	A-2043	10,000	6	Black	Wire Wound
A-7421	35	.25	Red	Braided	A-4356	20,000	-----	Blue	Wire Wound
A-5889	54	175	Blue	Wire Wound	A-3811	30,000	.5	Black	Wire Wound
A-5861	57	175	Blue	Wire Wound	A-3642	(6.04 ohms	per ft.	at 20° C.)	Wire Wd. Tap.
A-4365	63	10	Blue	Wire Wound	A-4260	2,000-7,000	20	Black	Wire Wd. Tap.
A-3590	110	1	Black	Wire Wound	A-5426	1,800-2,400	8	Blue	Wire Wd. Tap.
A-4670	110	1	Black	Wire Wound	A-5870	Use A-5426	-----	-----	-----
A-4915	110	1	Black	Candohm	A-6619	2,900-3,000	15	Blue	Wire Wd. Tap.
A-7427	160	1	Blue	Wire Wound	A-7120	2,400-3,200	4.5	Blue	Wire Wd. Tap.
A-6618	200	.5	Red	Braided	A-7461	3,900-4,300	-----	Blue	Wire Wd. Tap.
A-5502	200	1	Red	Candohm	A-6977	5,500-6,000	7	Blue	Wire Wd. Tap.
A-6976	230	3	Blue	Wire Wound	A-7462	60-220-2,100	-----	Blue	Wire Wd. Tap.

MODEL 99
Ensemble
Assembly
Wiring

SPARKS WITHINGTON CO.



No	COLOR AND SIZE OF WIRE
(1)	TWISTED PAIR BLUE WITH YELLOW TRACER #18
(2)	POWER CONNECTER
(3)	GREEN AND BLACK #18
(4)	GREEN #18
(5)	RED #18
(6)	RED AND BLACK #18
(7)	
(8)	YELLOW #18
(9)	BLACK AND WHITE #18
(10)	BLACK #18
(11)	TWISTED PAIR 1 WIRE BLACK 1 WIRE RED #14
(12)	PURPLE #18
(13)	BLUE #18
(14)	BROWN #18
(15)	YELLOW BLACK #18
(16)	BLACK #14

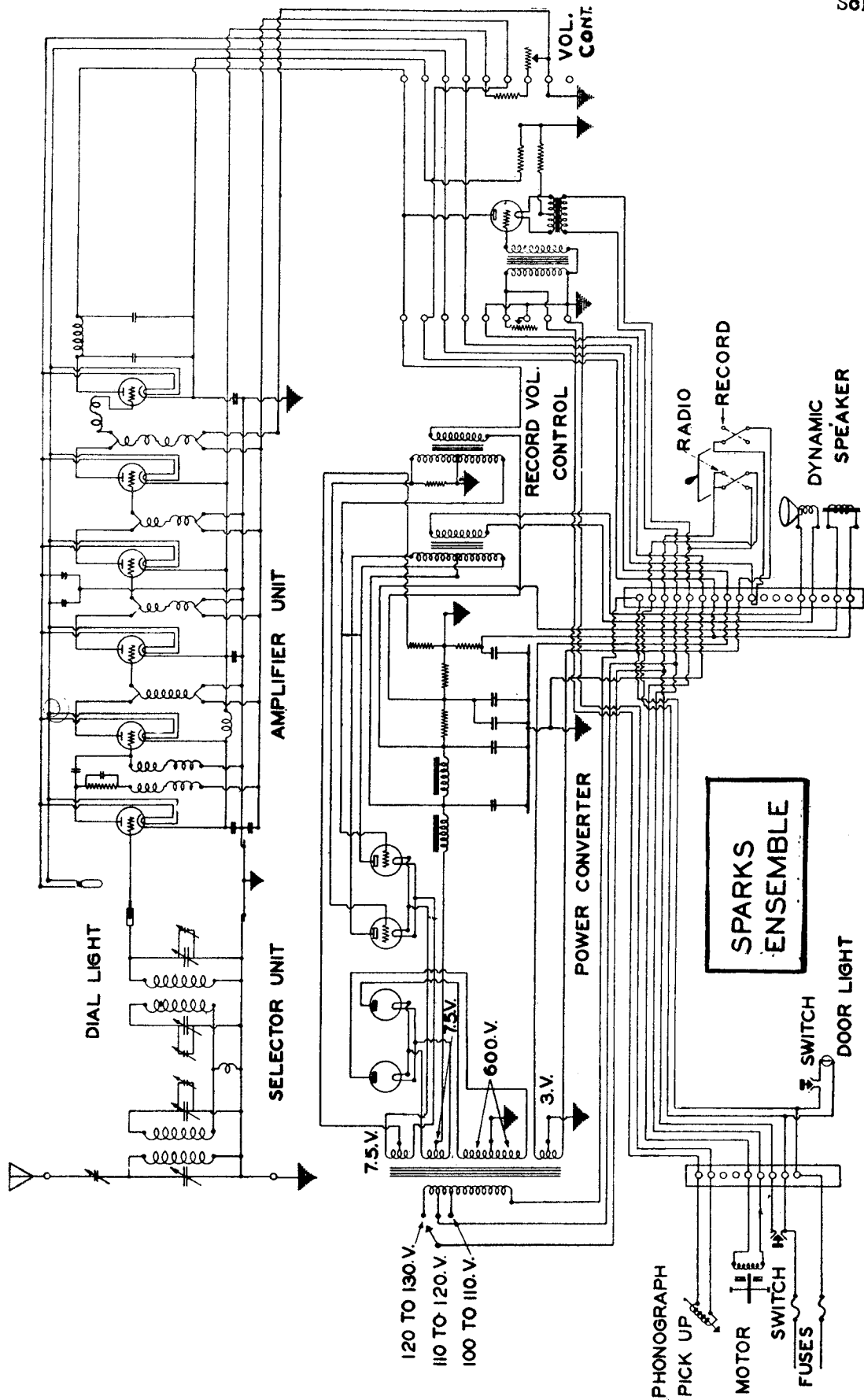
WIRING DIAGRAM - SPARKS ENSEMBLE

THE PHONOCRAFT CORPORATION

APPROVED BY: *[Signature]*

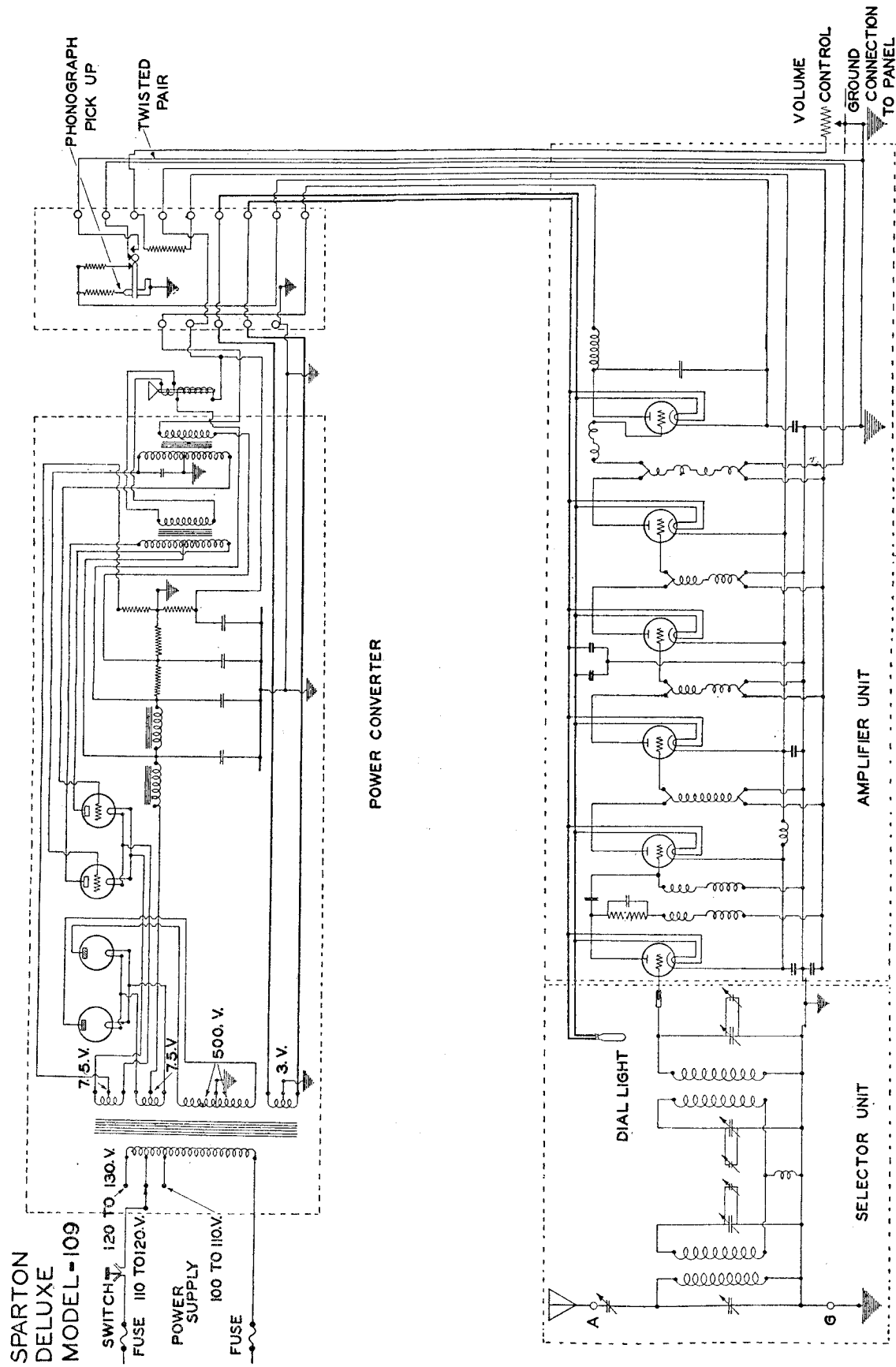
SPARKS WITHINGTON CO.

MODEL 99
Ensemble
Schematic



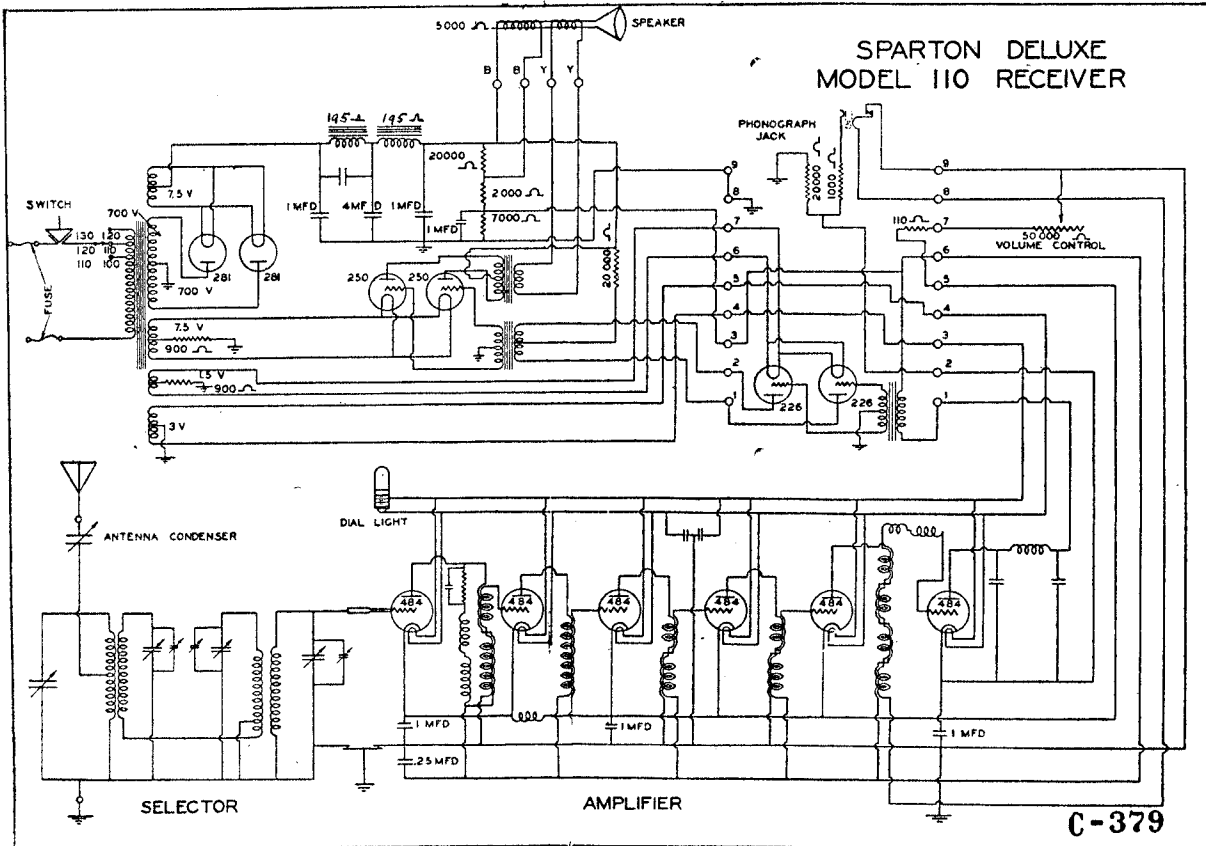
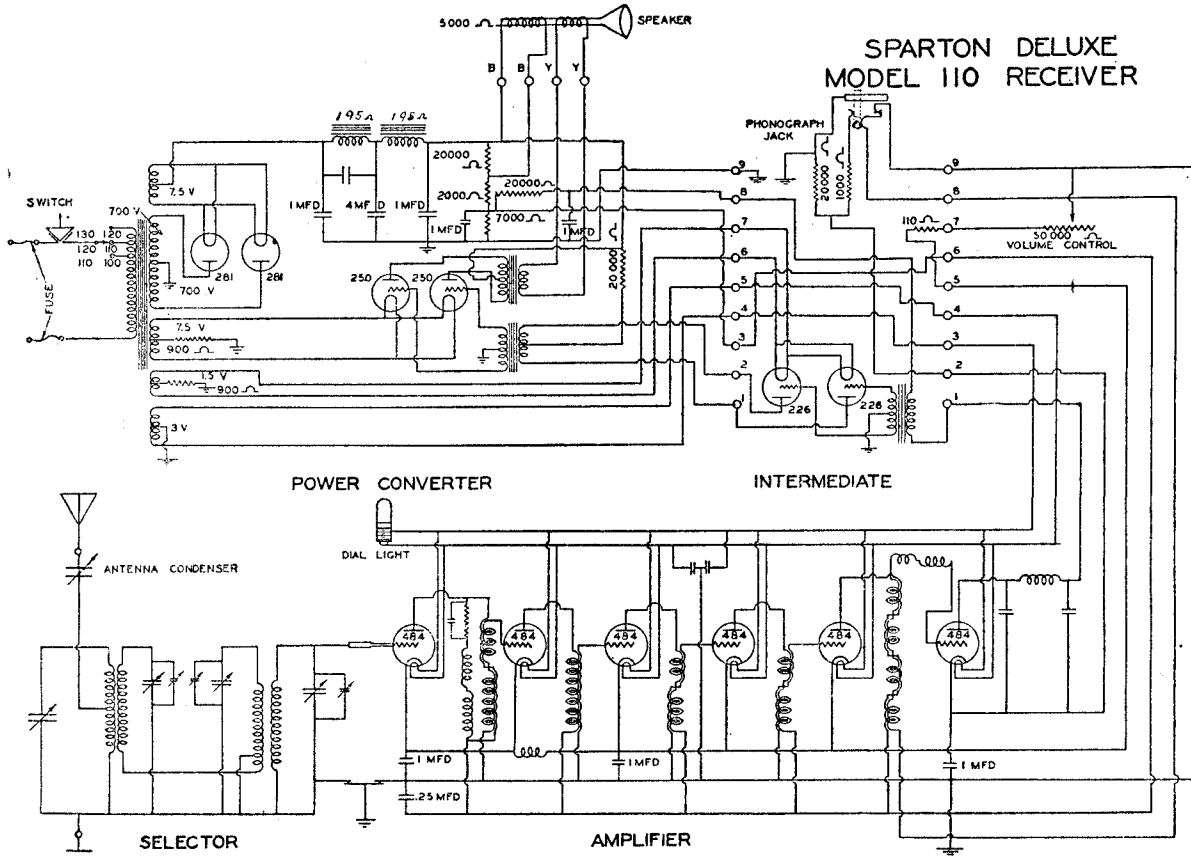
SPARKS WITHINGTON CO.

MODEL 109 DeLuxe
Schematic



SPARKS WITHINGTON CO.

MODEL 110,111 AC
Two Types
Schematics



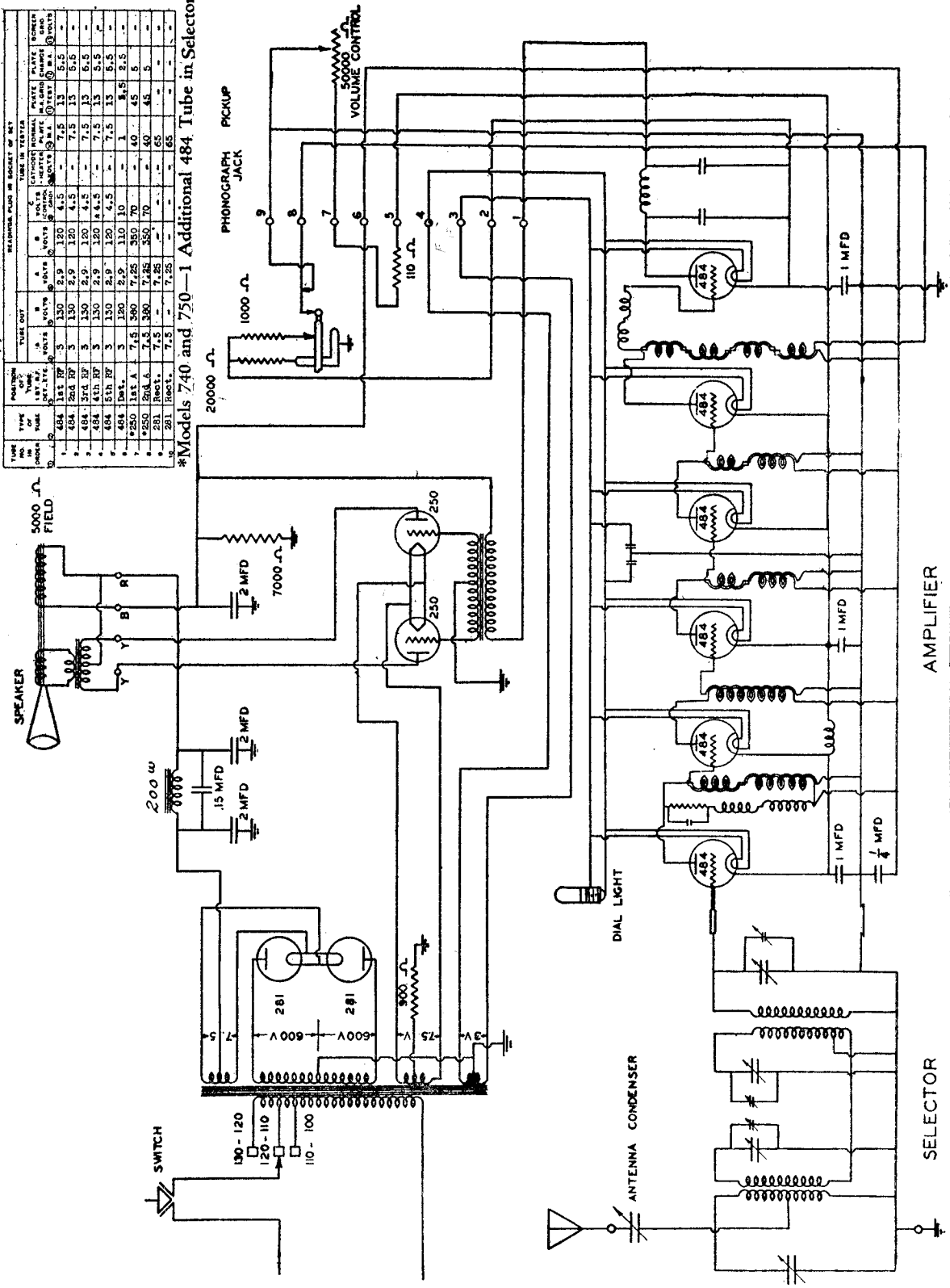
SPARKS WITHINGTON CO.

MODEL 301 AC

SPARTON—Model 301-740-750*
Line Voltage 120—Set on 120-130 Volt Tap—Volume
Control Position Max
*250 or 585 tubes.

TUBE NO.	TYPE	CATHODE	TUBE OUT		TUBE IN TESTER		RESISTOR VALUE IN SOCKET OF SET	VOLTAGE	CURRENT	POWER	WARRANTY	REMARKS
			1ST PIN	2ND PIN	1ST PIN	2ND PIN						
1	484	1A1 RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
2	484	37A RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
3	484	50A RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
4	484	50A RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
5	484	50A RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
6	484	50A RP	3	130 2.5	3	130 2.5	7.5	13	5.5	—	—	
7	250	1A1 A	7.5	300	7.5	300	40	45	5	—	—	
8	250	30A A	7.5	300	7.5	300	40	45	5	—	—	
9	281	Rect.	7.5	7.25	7.5	7.25	65	—	—	—	—	
10	281	Rect.	7.5	7.25	7.5	7.25	65	—	—	—	—	

*Models 740 and 750—1 Additional 484 Tube in Selector



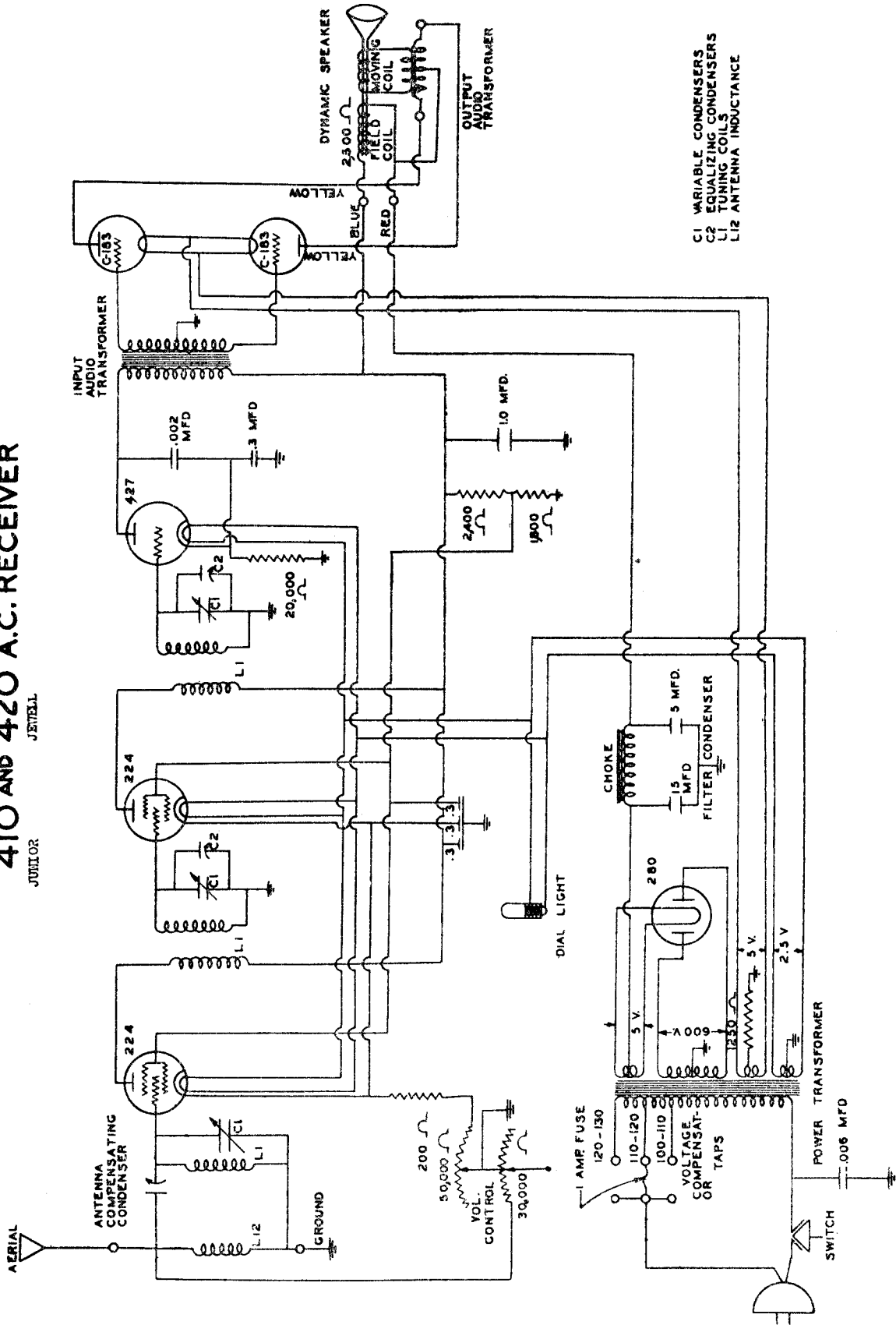
AMPLIFIER

SELECTOR

SPARKS WITHINGTON CO.

MODEL 420 AC
Schematic

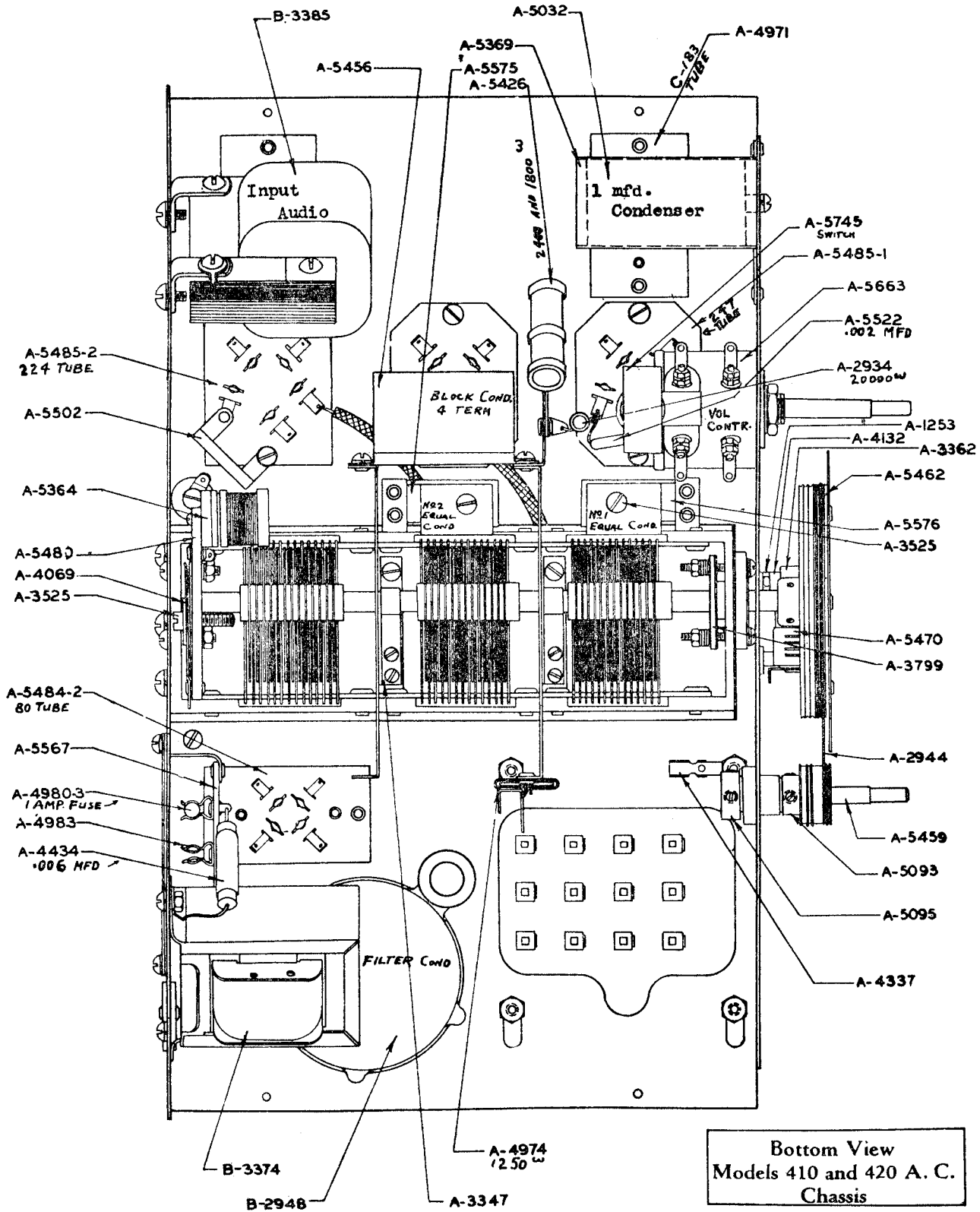
SPARTON MODEL
410 AND 420 A.C. RECEIVER
JEWELL
JUNIOR



C1 VARIABLE CONDENSERS
C2 EQUALIZING CONDENSERS
L1 TUNING COILS
L12 ANTENNA INDUCTANCE

MODEL 420 AC
Chassis

SPARKS WITHINGTON CO.

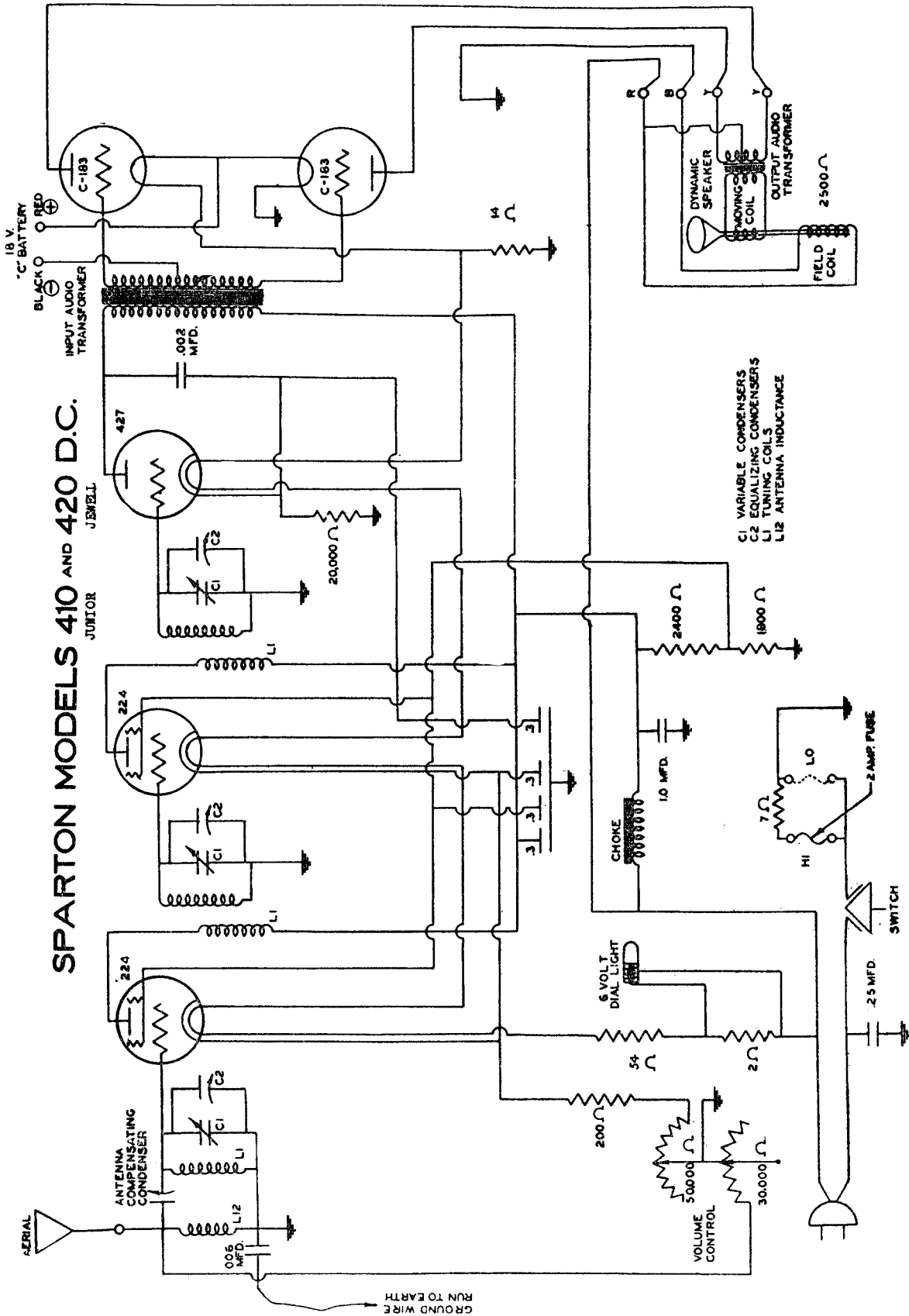


Bottom View
Models 410 and 420 A. C.
Chassis

SPARKS WITHINGTON CO.

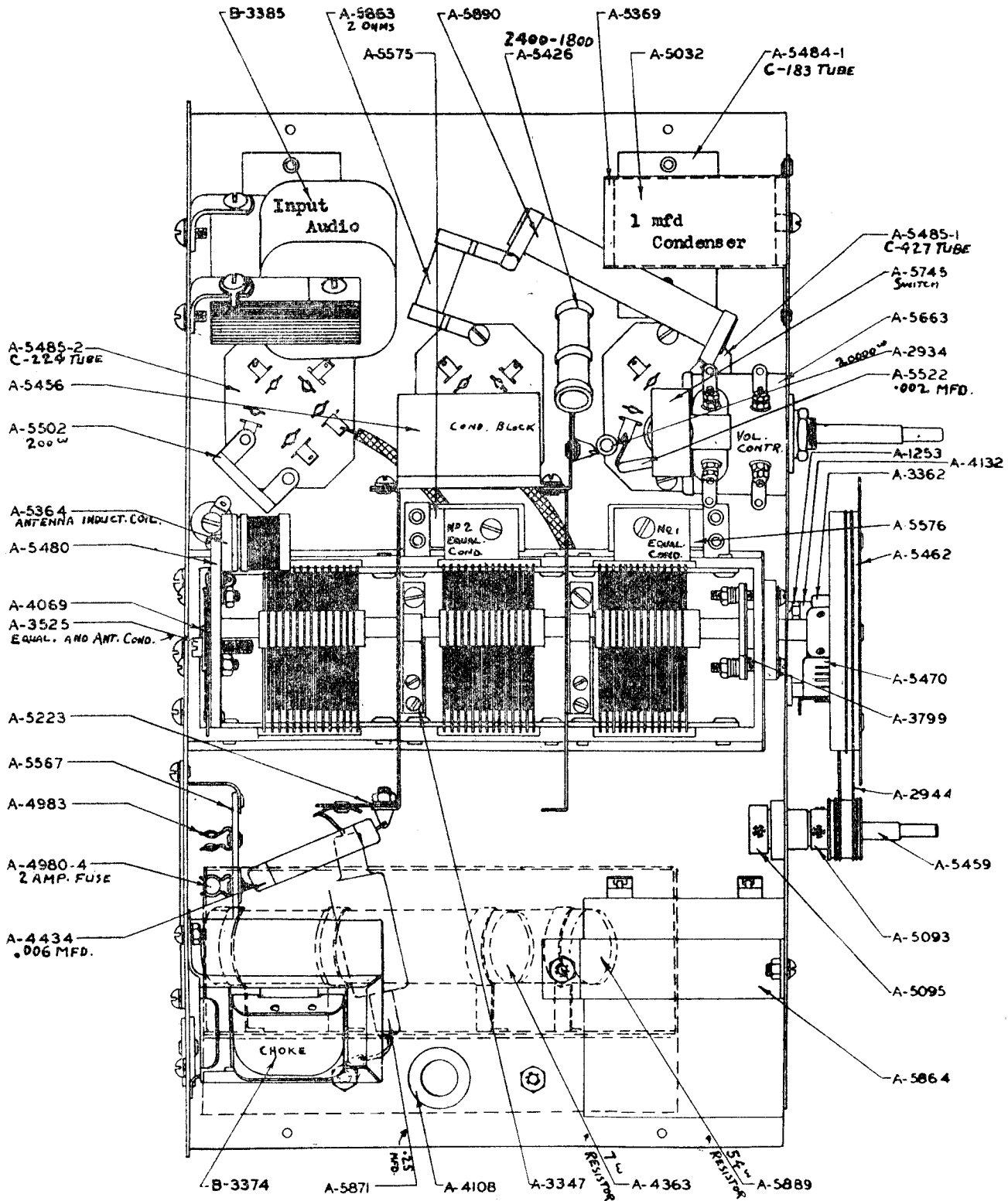
MODEL 420 DC
Schematic

SPARTON MODELS 410 AND 420 D.C.
JEWELL JUNIOR



MODEL 420 DC
Chassis

SPARKS WITHINGTON CO.



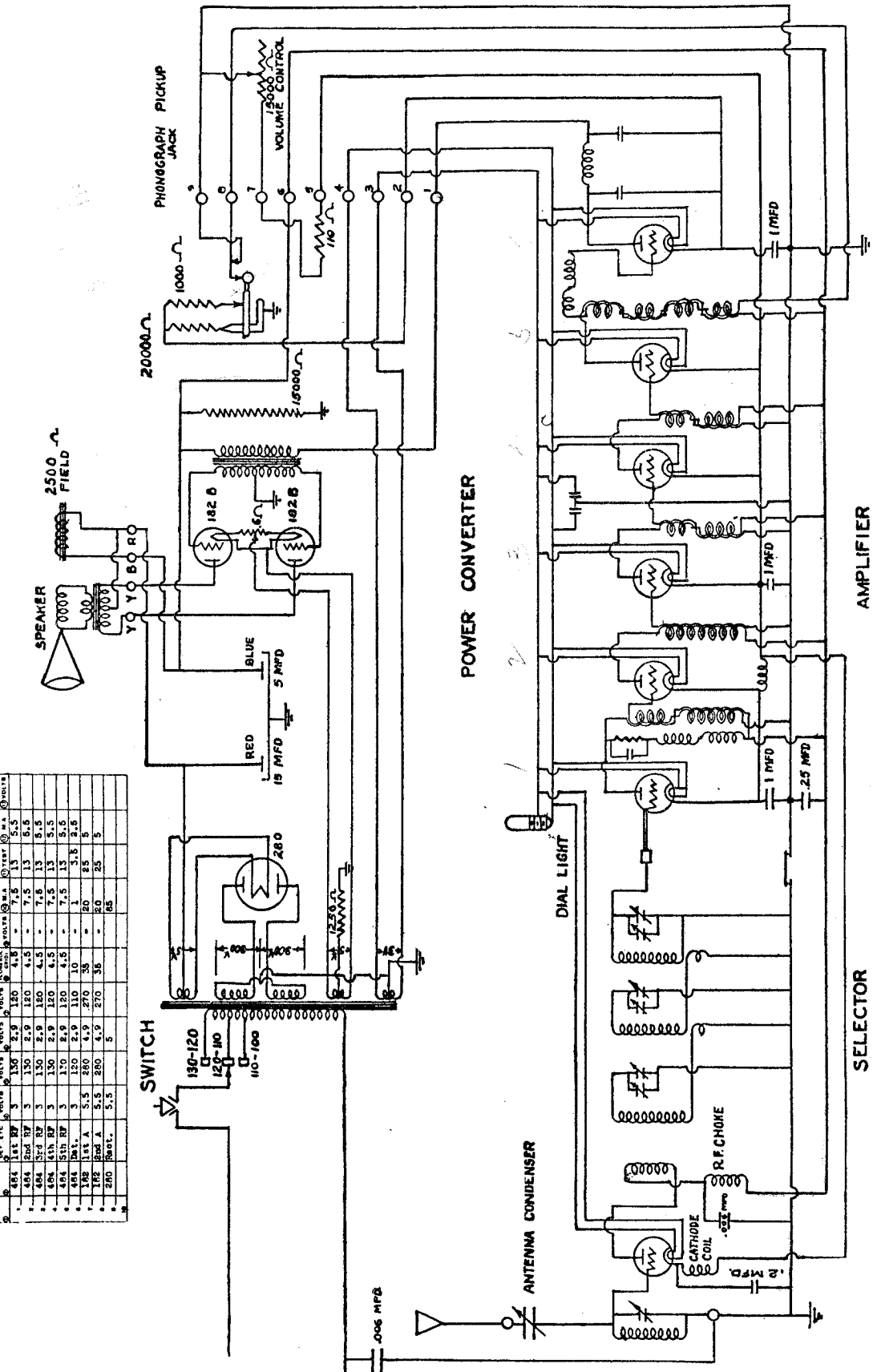
Bottom View—Model 410 and 420 D. C. Chassis

SPARKS WITHINGTON CO.

MODEL 589 AC

SPARTON—Model -589.
Line Voltage 120—Set on 120-130 Volt Tap—Volume Control Position Max

TUBE	TYPE	TYPE OF GRID	VOLTAGE			PLATE RESISTOR	PLATE SUPPLY	SCREEN SUPPLY	CONTROL SUPPLY	CATHODE RESISTOR	CATHODE BIAS	CATHODE CAPACITOR	CATHODE COIL	CATHODE COIL CAPACITOR	CATHODE COIL RESISTANCE	CATHODE COIL INDUCTIVE REACTANCE	CATHODE COIL QUALITY FACTOR	CATHODE COIL PERMEABILITY	CATHODE COIL LENGTH	CATHODE COIL DIAMETER	CATHODE COIL AREA	CATHODE COIL WEIGHT	CATHODE COIL COST	CATHODE COIL MATERIAL	CATHODE COIL TYPE	CATHODE COIL MANUFACTURER	CATHODE COIL PART NO.	CATHODE COIL ORDER NO.	
			AC	DC	MAX																								MIN
589A	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589B	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589C	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589D	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589E	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589F	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589G	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589H	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589I	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589J	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589K	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589L	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589M	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589N	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589O	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589P	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589Q	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589R	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589S	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589T	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589U	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589V	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589W	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589X	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589Y	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
589Z	6X4	RT	130	2.9	130	260	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100



MODEL 600,610,620,
737 AC.
737 Below # 6502

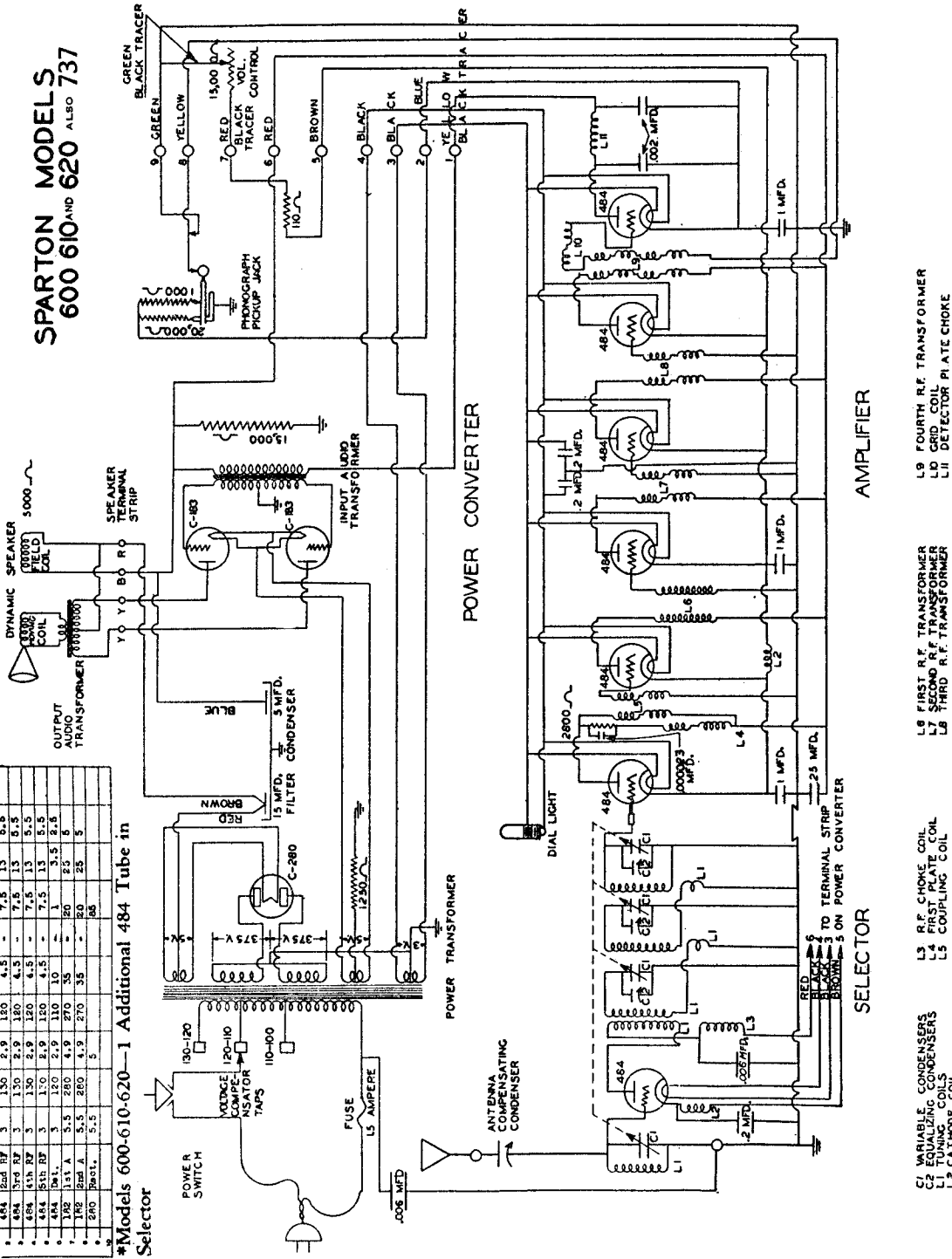
SPARKS WITHINGTON CO.

**SPARTON MODELS
600 610 AND 620 ALSO 737**

SPARTON — Model 610-620*
Line Voltage 120—Set on 120-130 Volt Tap—Volume
Control Position Max

TUBE NO.	TYPE OF TUBE	TUBE IN TESTER		TUBE IN SOCKET OF SET	
		RESISTANCE IN OHMS	VOLTS ACROSS TUBE	RESISTANCE IN OHMS	VOLTS ACROSS TUBE
1	6X4	100-150	2.9	120	4.5
2	6X4	100-150	2.9	120	4.5
3	6X4	100-150	2.9	120	4.5
4	6X4	100-150	2.9	120	4.5
5	6X4	100-150	2.9	120	4.5
6	6X4	100-150	2.9	120	4.5
7	6X4	100-150	2.9	120	4.5
8	6X4	100-150	2.9	120	4.5
9	6X4	100-150	2.9	120	4.5
10	6X4	100-150	2.9	120	4.5
11	6X4	100-150	2.9	120	4.5
12	6X4	100-150	2.9	120	4.5
13	6X4	100-150	2.9	120	4.5
14	6X4	100-150	2.9	120	4.5
15	6X4	100-150	2.9	120	4.5
16	6X4	100-150	2.9	120	4.5
17	6X4	100-150	2.9	120	4.5
18	6X4	100-150	2.9	120	4.5
19	6X4	100-150	2.9	120	4.5
20	6X4	100-150	2.9	120	4.5
21	6X4	100-150	2.9	120	4.5
22	6X4	100-150	2.9	120	4.5
23	6X4	100-150	2.9	120	4.5
24	6X4	100-150	2.9	120	4.5
25	6X4	100-150	2.9	120	4.5
26	6X4	100-150	2.9	120	4.5
27	6X4	100-150	2.9	120	4.5
28	6X4	100-150	2.9	120	4.5
29	6X4	100-150	2.9	120	4.5
30	6X4	100-150	2.9	120	4.5
31	6X4	100-150	2.9	120	4.5
32	6X4	100-150	2.9	120	4.5
33	6X4	100-150	2.9	120	4.5
34	6X4	100-150	2.9	120	4.5
35	6X4	100-150	2.9	120	4.5
36	6X4	100-150	2.9	120	4.5
37	6X4	100-150	2.9	120	4.5
38	6X4	100-150	2.9	120	4.5
39	6X4	100-150	2.9	120	4.5
40	6X4	100-150	2.9	120	4.5
41	6X4	100-150	2.9	120	4.5
42	6X4	100-150	2.9	120	4.5
43	6X4	100-150	2.9	120	4.5
44	6X4	100-150	2.9	120	4.5
45	6X4	100-150	2.9	120	4.5
46	6X4	100-150	2.9	120	4.5
47	6X4	100-150	2.9	120	4.5
48	6X4	100-150	2.9	120	4.5
49	6X4	100-150	2.9	120	4.5
50	6X4	100-150	2.9	120	4.5

*Models 600-610-620—1 Additional 484 Tube in
Selector

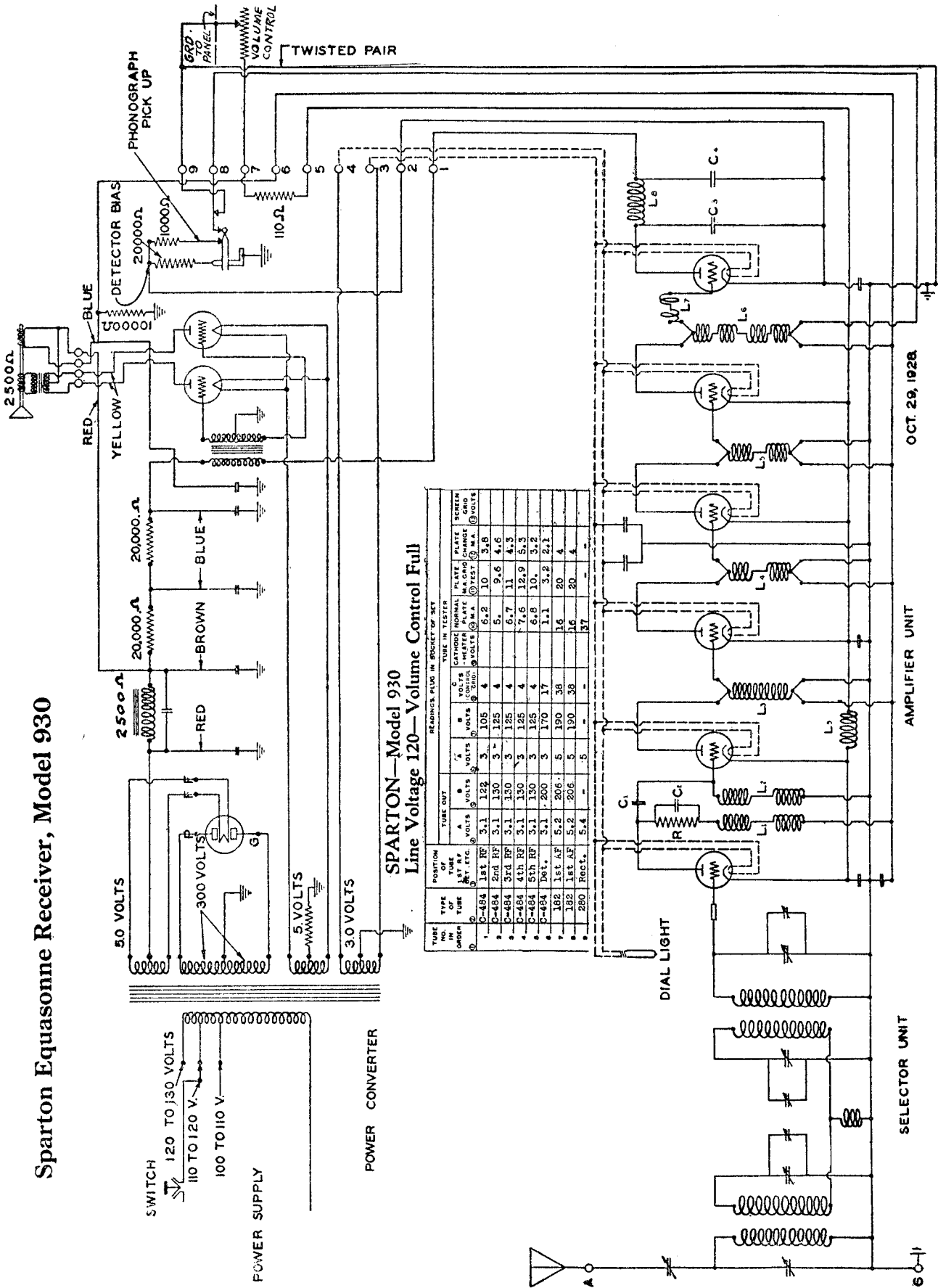


- C1 VARIABLE CONDENSERS
- C2 EQUALIZING CONDENSERS
- L1 TUNING COILS
- L2 CATHODE COIL
- L3 R.F. CHOKES COIL
- L4 FIRST PLATE COIL
- L5 COUPLING COIL
- L6 THIRD R.F. TRANSFORMER
- L7 SECOND R.F. TRANSFORMER
- L8 FIRST R.F. TRANSFORMER
- L9 FOURTH R.F. TRANSFORMER
- L10 GRID COIL
- L11 DETECTOR PLATE CHOKE

MODEL 930 AC

SPARKS WITHINGTON CO.

Sparton Equasonne Receiver, Model 930



SPARTON—Model 930
Line Voltage 120—Volume Control Full

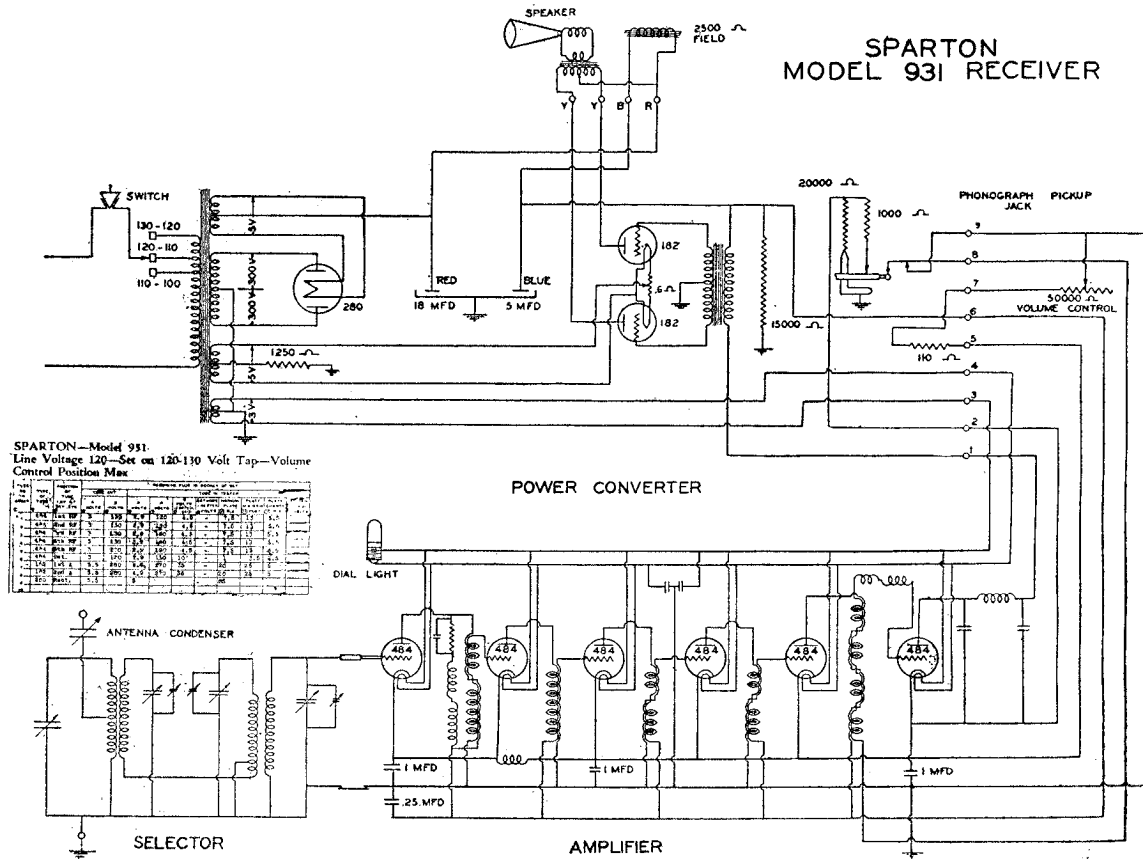
TUBE NO. OR GROUP	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	TUBE OUT		TUBE IN TESTER		CATHODE NORMAL		PLATE NORMAL		SERIES	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	PLATE	CHARGE	GRID	SCREEN	①	②
1	6-484	1st RF	3.1	122	3	105	5	10	2.8	5	5.6	4.6
2	6-484	2nd RF	3.1	150	3	125	4	5	3.6	5.7	11	4.3
3	6-484	3rd RF	3.1	150	3	125	4	5	7.6	12.9	5.3	
4	6-484	5th RF	3.1	150	3	125	4	5	6.8	10	3.2	
5	6-484	Det.	3.1	200	3	170	17	1.1	3.2	2.1		
6	1B2	1st AF	5.2	206	5	190	38	16	20	4		
7	1B2	1st AF	5.2	206	5	190	38	16	20	4		
8	2B5	Rect.	5.4	-	5	-	37	-	-	-		

OCT. 29, 1928.

SPARKS WITHINGTON CO.

MODEL 931 AC
MODEL 931 DC

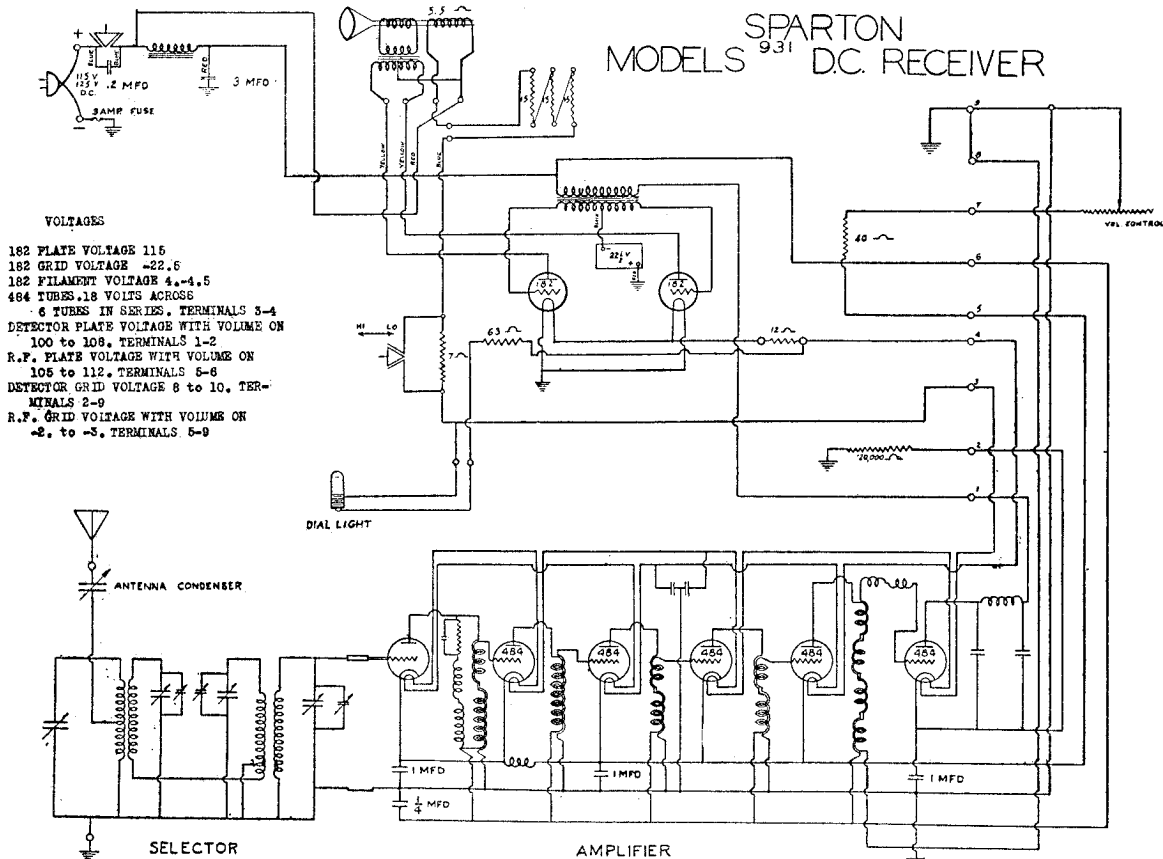
SPARTON
MODEL 931 RECEIVER



SPARTON—Model 931.
Line Voltage 120—Set on 120-130 Volt Tap—Volume
Control Position Max

Tap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Line Voltage	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230
Volume Control	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

SPARTON
MODELS 931 DC RECEIVER

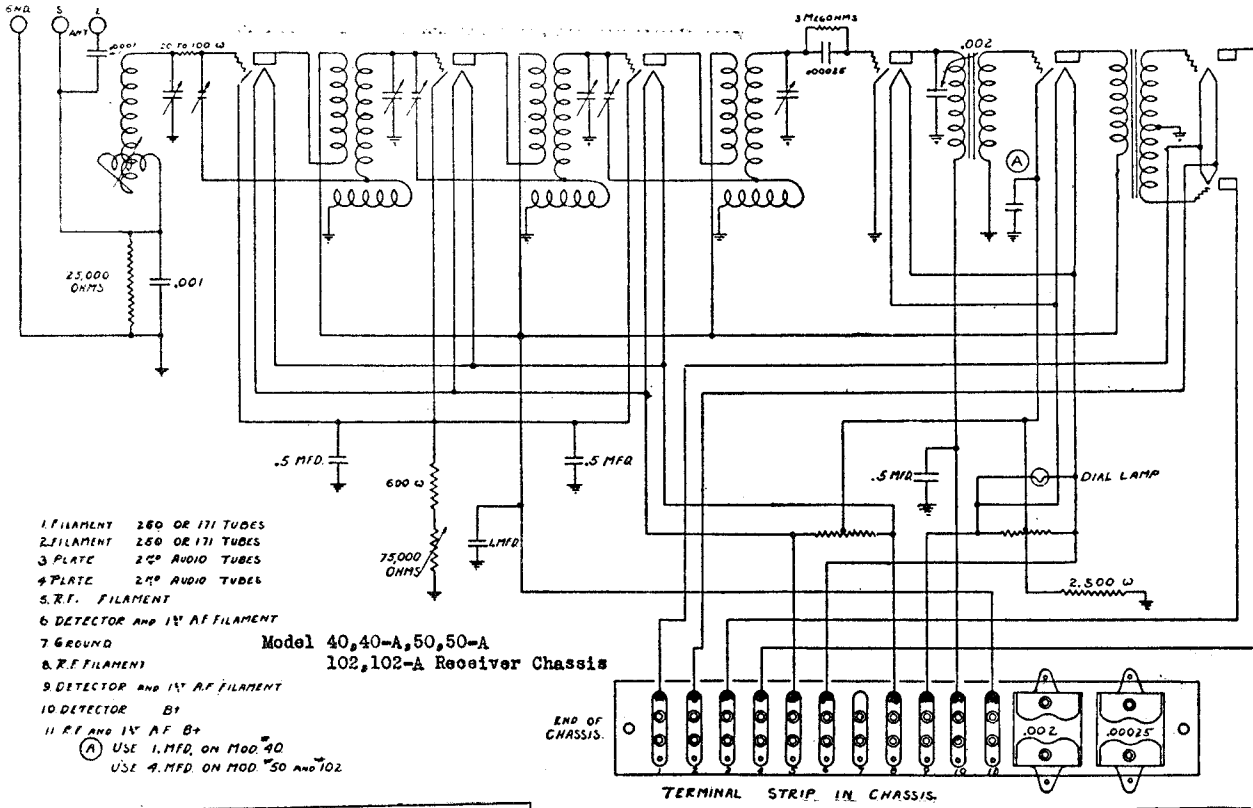


VOLTAGES

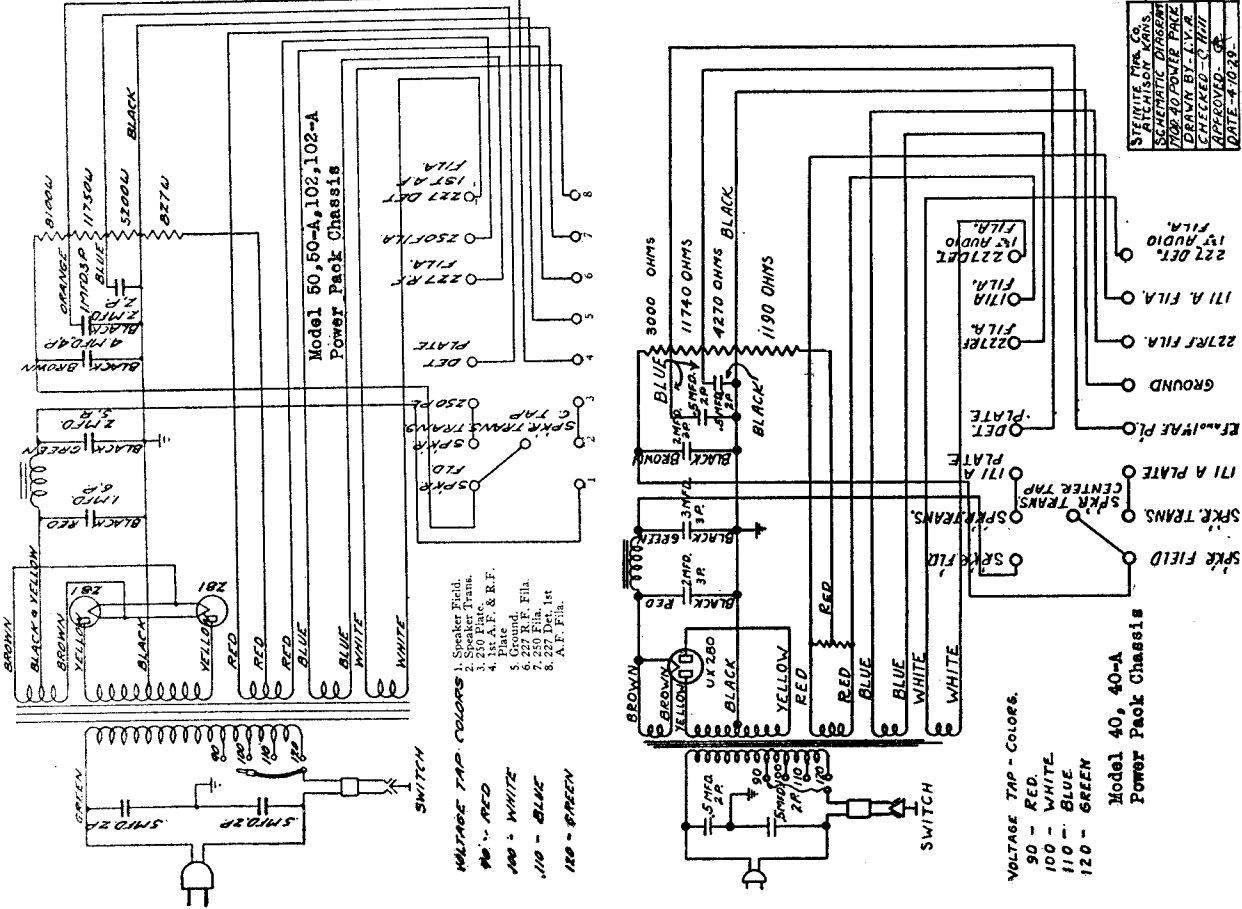
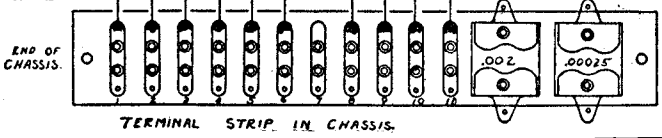
- 182 PLATE VOLTAGE 115
- 182 GRID VOLTAGE -22.5
- 182 FILAMENT VOLTAGE 4.4-4.5
- 484 TUBES 1.8 VOLTS ACROSS
- 6 TUBES IN SERIES, TERMINALS 5-4
- DETECTOR PLATE VOLTAGE WITH VOLUME ON 100 to 108, TERMINALS 1-2
- R.F. PLATE VOLTAGE WITH VOLUME ON 105 to 112, TERMINALS 5-6
- DETECTOR GRID VOLTAGE 8 to 10, TERMINALS 2-9
- R.F. GRID VOLTAGE WITH VOLUME ON -2. to -3, TERMINALS 5-9

STEINITE RADIO CO.

MODEL 40,40-A,50,50-A,
102,102-A
Schematic



- 1 FILAMENT 250 OR 171 TUBES
 - 2 FILAMENT 250 OR 171 TUBES
 - 3 PLATE 2ND AUDIO TUBES
 - 4 PLATE 2ND AUDIO TUBES
 - 5 R.F. FILAMENT
 - 6 DETECTOR AND 1ST AF FILAMENT
 - 7 GROUND
 - 8 R.F. FILAMENT
 - 9 DETECTOR AND 1ST AF FILAMENT
 - 10 DETECTOR B+
 - 11 R.F. AND 1ST AF B+
- Model 40,40-A,50,50-A
102,102-A Receiver Chassis
- (A) USE 1. MFD. ON MOD. 40
USE 4. MFD. ON MOD. 50 AND 102



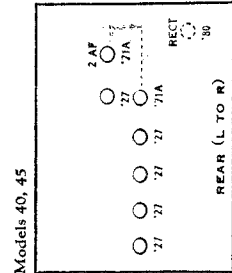
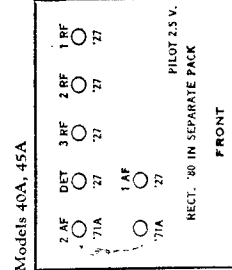
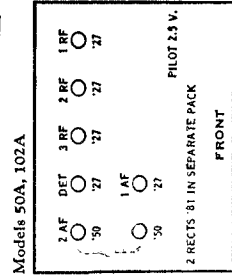
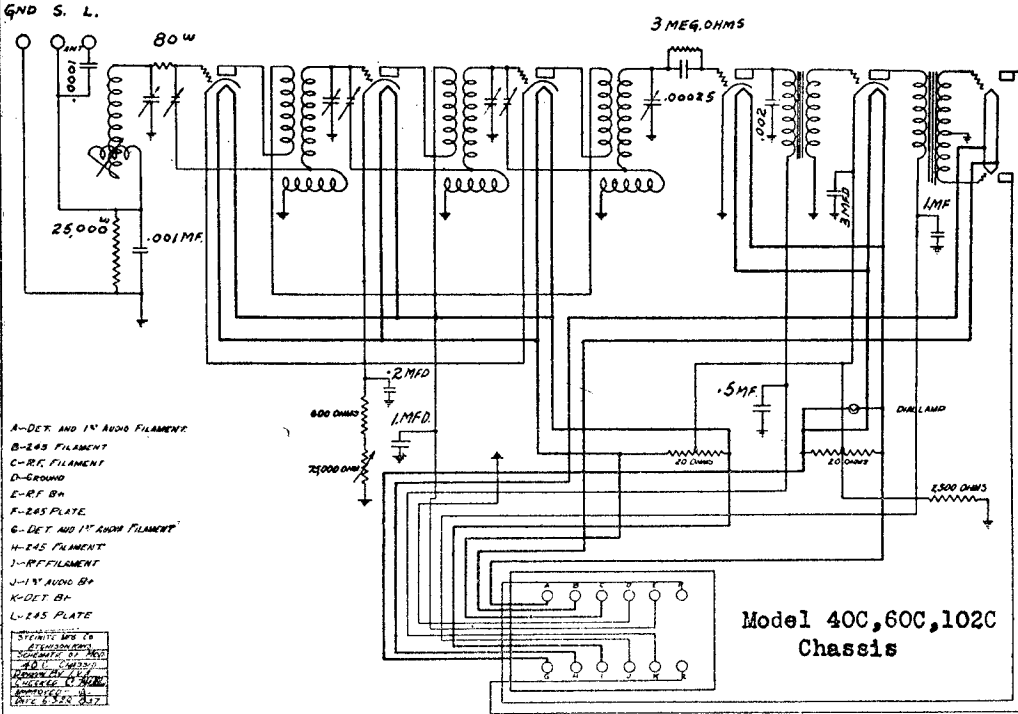
- 1. Speaker Field
- 2. Speaker Term.
- 3. 250 Plate.
- 4. 1ST A.F. & R.F.
- 5. Ground.
- 6. 227 R.F. Fila.
- 7. 227 Det. 1st
- 8. A.F. Fila.

- VOLTAGE TAP - COLORS.
- 90 - RED.
 - 100 - WHITE
 - 110 - BLUE
 - 120 - GREEN

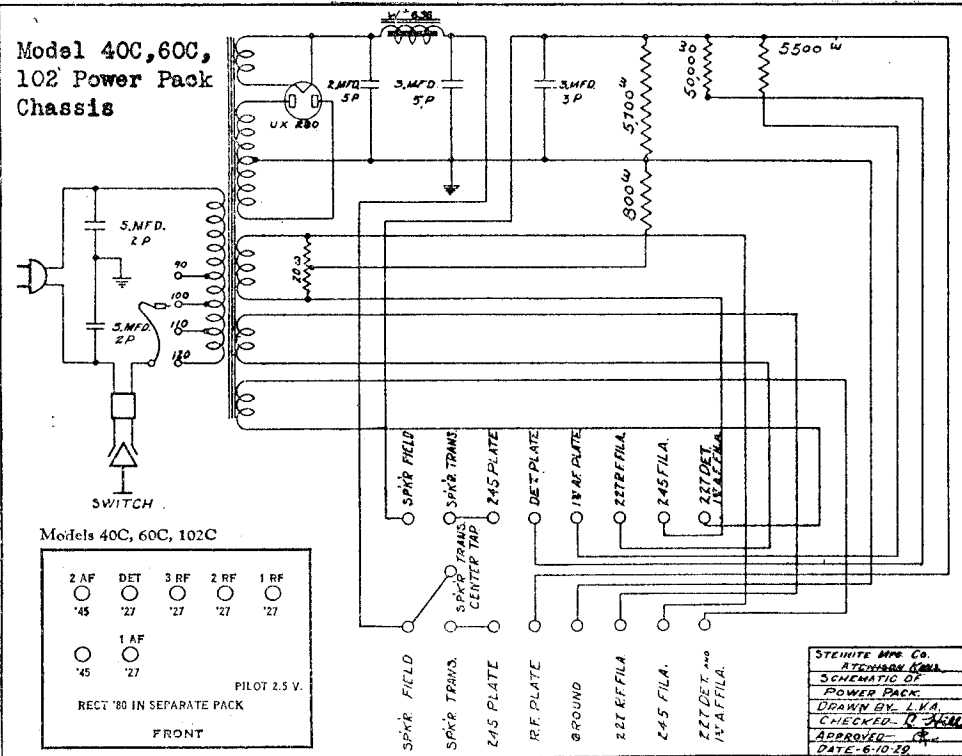
STEINITE R. CO.
ATLANTA, GA.
DESIGNED BY - J. W. B.
DRAWN BY - J. W. B.
CHECKED - C. T. H.
APPROVED - C. T. H.
DATE - 4-10-35.

MODEL 40C, 60C, 102C
MODEL 40, 45, 40A, 45A, 50A, 102
Voltage- Socket

STEINITE RADIO CO.



Model 40C, 60C, 102 Power Pack Chassis



STEINITE—Models 50A-102A
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position—Max

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION	READINGS, PLUG IN SOCKET OF SET									
			TUBE IN TESTER			TUBE IN SET			TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS	PLATE MA. GRID CHANGE	SCREEN GRID CHANGE	PLATE MA. GRID CHANGE	SCREEN GRID CHANGE
1	227	1st RF	2.75	134	2.45	125	6.5	—	4.25	8.25	4	—
2	227	2nd RF	2.75	134	2.45	125	6.5	—	5.0	9.0	4	—
3	227	3rd RF	2.75	134	2.45	125	6.5	—	5.0	9.0	4	—
4	227	Det.	2.6	35	2.3	25	—	—	2.5	2.5	0	—
5	227	1st AF	2.6	142	2.3	120	3.1	—	3.6	6.6	3	—
6	245	2nd AF	2.6	270	2.4	250	50	—	55	40	5	—
7	250	2nd AF	2.6	270	2.4	250	50	—	55	40	5	—
8	280	Rect.	—	—	—	—	—	—	—	—	—	—

STEINITE—Models 40A-45A
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position Max

STEINITE—Models 40C-60C-102C
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position Max

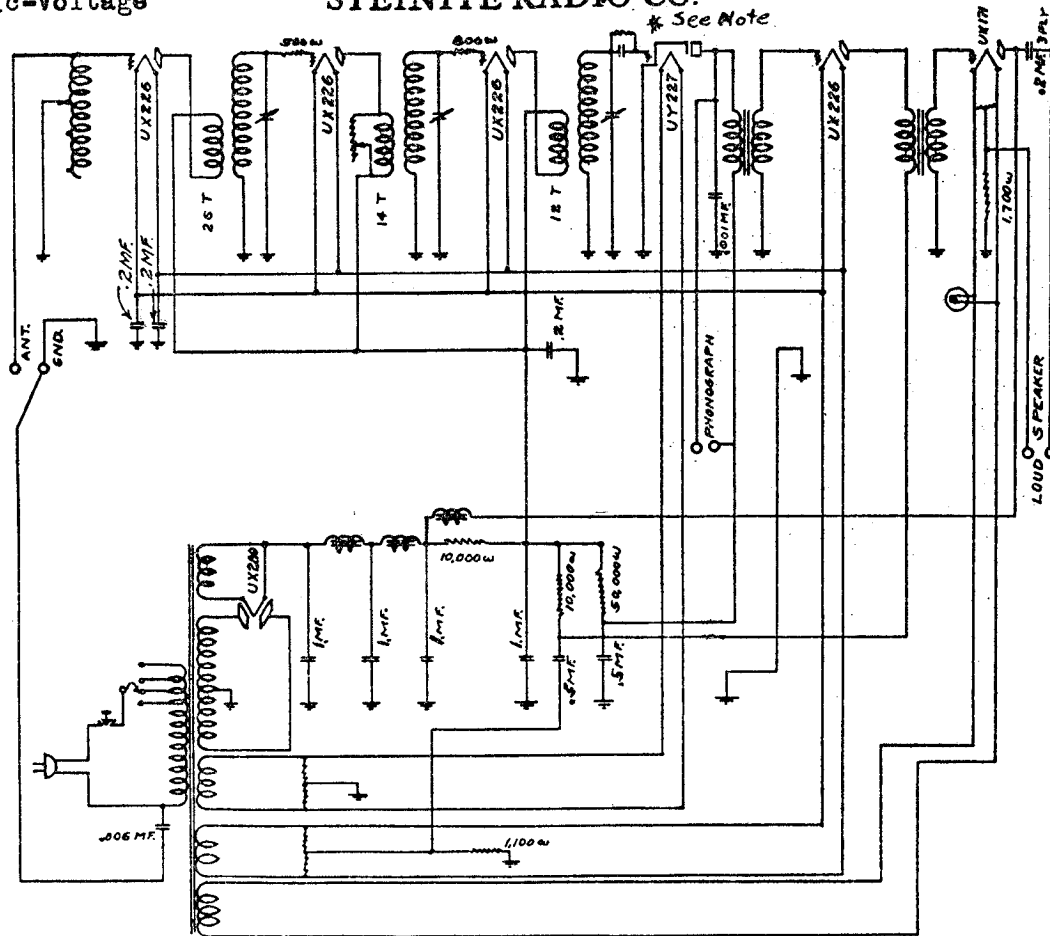
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION	READINGS, PLUG IN SOCKET OF SET									
			TUBE IN TESTER			TUBE IN SET			TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS	PLATE MA. GRID CHANGE	SCREEN GRID CHANGE	PLATE MA. GRID CHANGE	SCREEN GRID CHANGE
1	227	1st RF	2.6	133	2.3	125	6.5	—	4.5	8.25	4	—
2	227	2nd RF	2.6	133	2.3	125	6.5	—	5.0	9.0	4	—
3	227	3rd RF	2.6	133	2.3	125	6.5	—	5.0	9.0	4	—
4	227	Det.	2.6	35	2.3	25	—	—	2.5	2.5	0	—
5	227	1st AF	2.6	142	2.3	120	3.1	—	3.6	6.6	3	—
6	245	2nd AF	2.6	270	2.4	250	50	—	55	40	5	—
7	245	2nd AF	2.6	270	2.4	250	50	—	55	40	5	—
8	280	Rect.	—	—	—	—	—	—	—	—	—	—

STEINITE MFG CO.
ATLANTA, GA.
SCHEMATIC OF
POWER PACK
DRAWN BY L.V.A.
CHECKED BY R. CHAM.
APPROVED BY
DATE: 6-10-37

MODEL 261, 262, 263, 264, 265
Schematic-Voltage
Socket

STEINITE RADIO CO.

* See Note



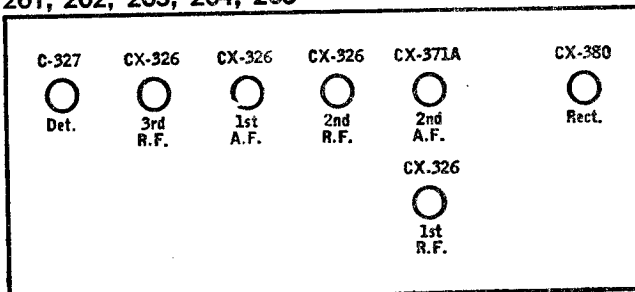
* A small capacity is connected between detector grid and the filament in the form of a piral pair of twisted wires.
**Two bindings posts supplying 110V AC are included on all model 261 sets made since September 20, 1938. These are provided for supplying current to dynamic speakers, permitting complete control of the AC supply to both the set and speaker through the toggle switch

STEINITE--Models 261-262
Line Voltage 112--110 Volt Tap

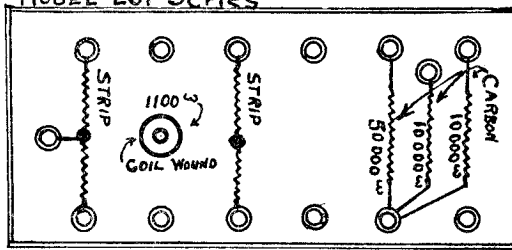
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, R.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET						TUBE IN TESTER			
			TUBE OUT		A		B		C		CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE
			VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	VOLTS			
1	226	1st. R.F.	1.45	120	1.30	115	11	-	3.0	7.0	4.0	
2	226	2nd. R.F.	1.45	120	1.30	115	11	-	3.0	7.0	4.0	
3	226	3rd. R.F.	1.45	120	1.30	115	11	-	3.0	7.0	4.0	
4	227	Detector	2.30	116	2.15	44	-	-	2.0	2.0	0.0	
5	226	1st. A.F.	1.45	112	1.30	100	10	-	3.0	7.0	4.0	
6	171A	2nd. A.F.	4.60	320	4.60	176	33	-	22.0	24.0	2.0	
7	280	Rectifier	4.65	-	4.50	-	-	-	20.0	-	-	

261, 262, 263, 264, 265

(A.C.)



MODEL 261 Series

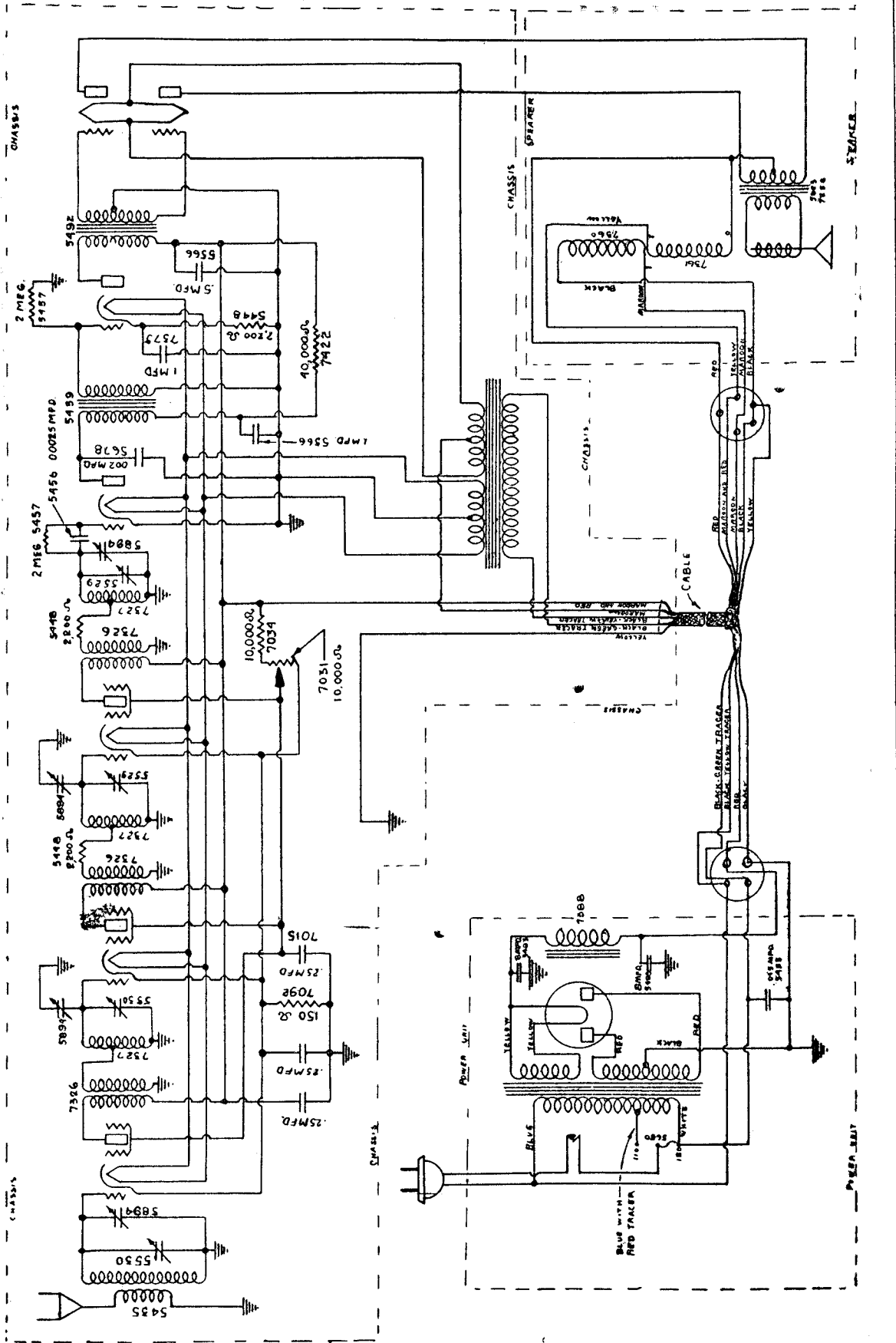


POWER PACK TERMINAL STRIP.

MODEL 4
Schematic

STERLING MFG. CO.

Complete Schematic Diagram of the No. 4 Circuit

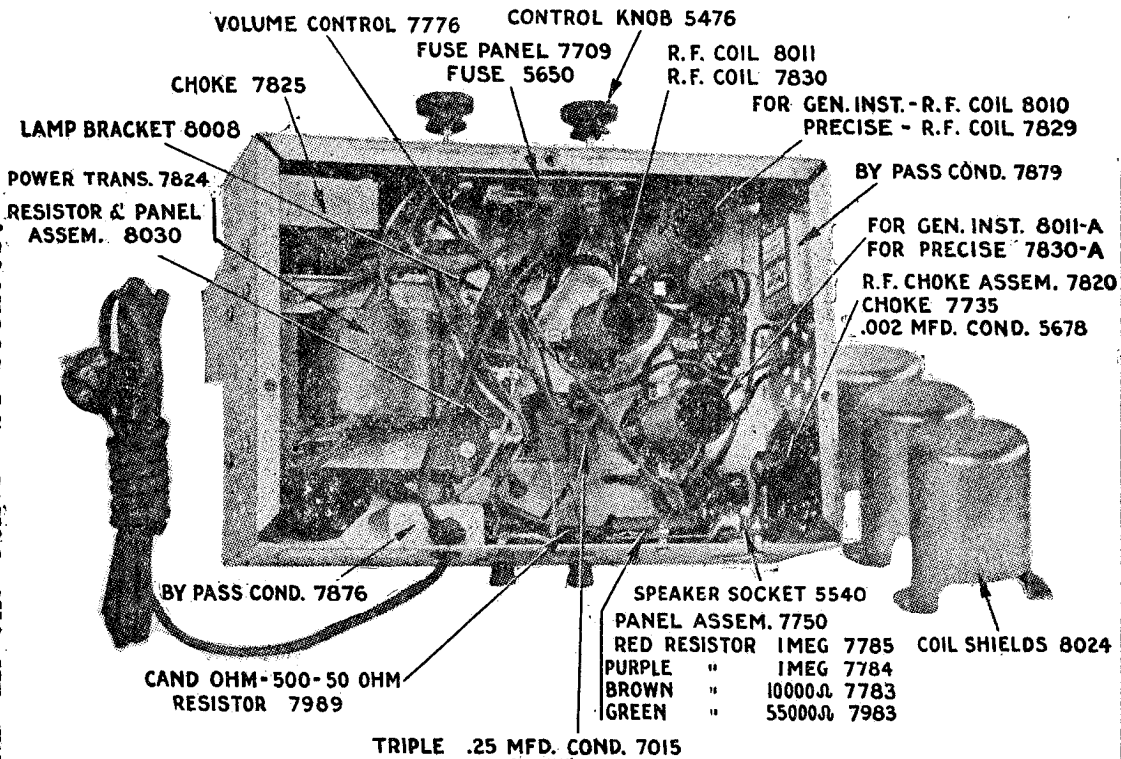


MODEL Miniature
Chassis Views

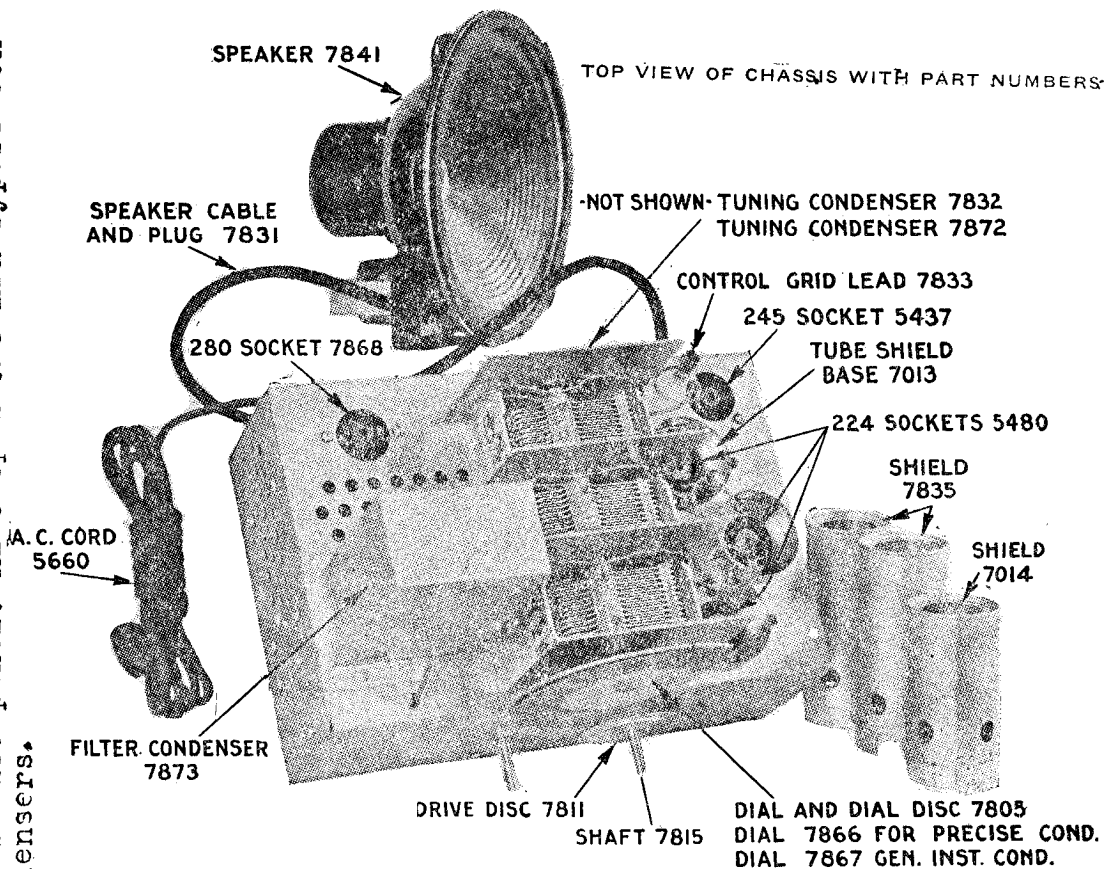
STERLING MFG. CO.

One possible remedy for excessive hum is some condition in the detector tube circuit. Try each of the '24 tubes in the detector socket. A tube that hums in the detector socket, may not hum in the other '24 sockets.

In the event of excessive regeneration difficulties, check the position of the grid wires. If too close together, this trouble is liable to occur. Check the .015 mfd condenser on the center of the fuse panel. Also open .25 mfd bypass condensers.



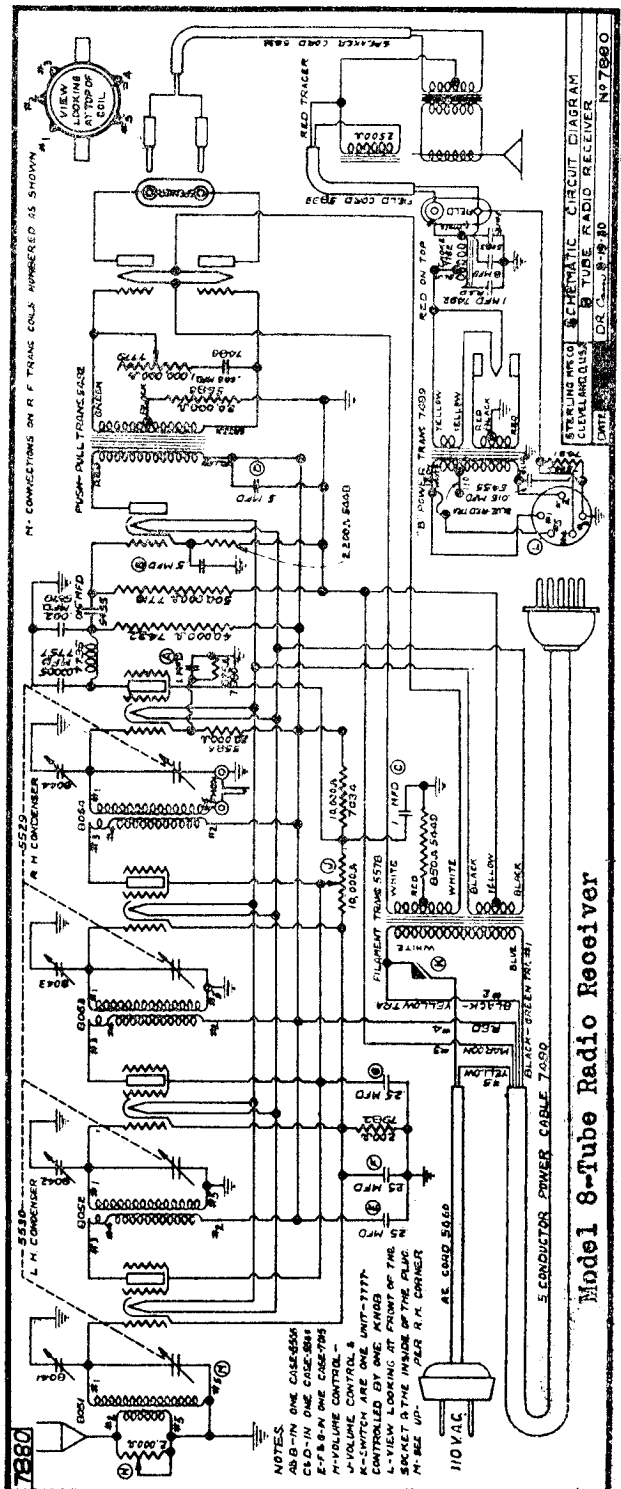
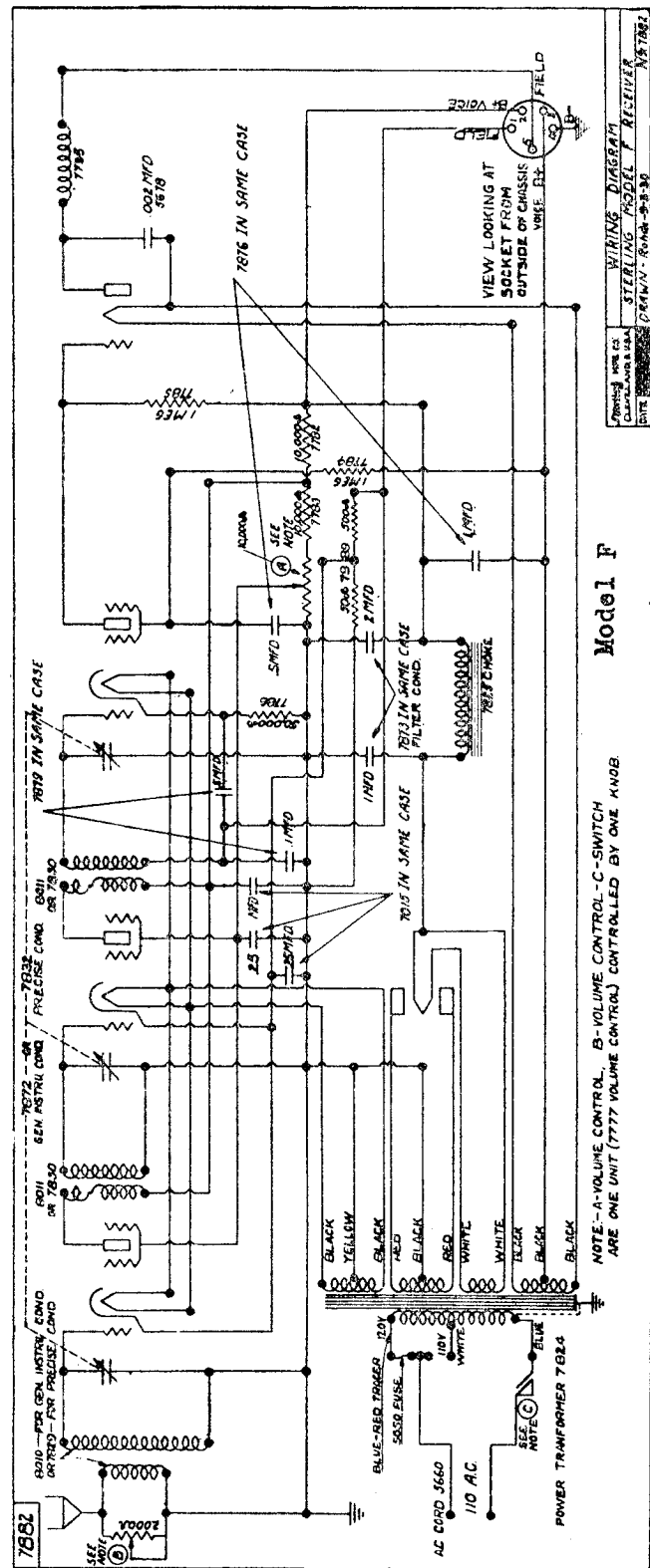
BOTTOM VIEW OF CHASSIS WITH PART NUMBERS



TOP VIEW OF CHASSIS WITH PART NUMBERS

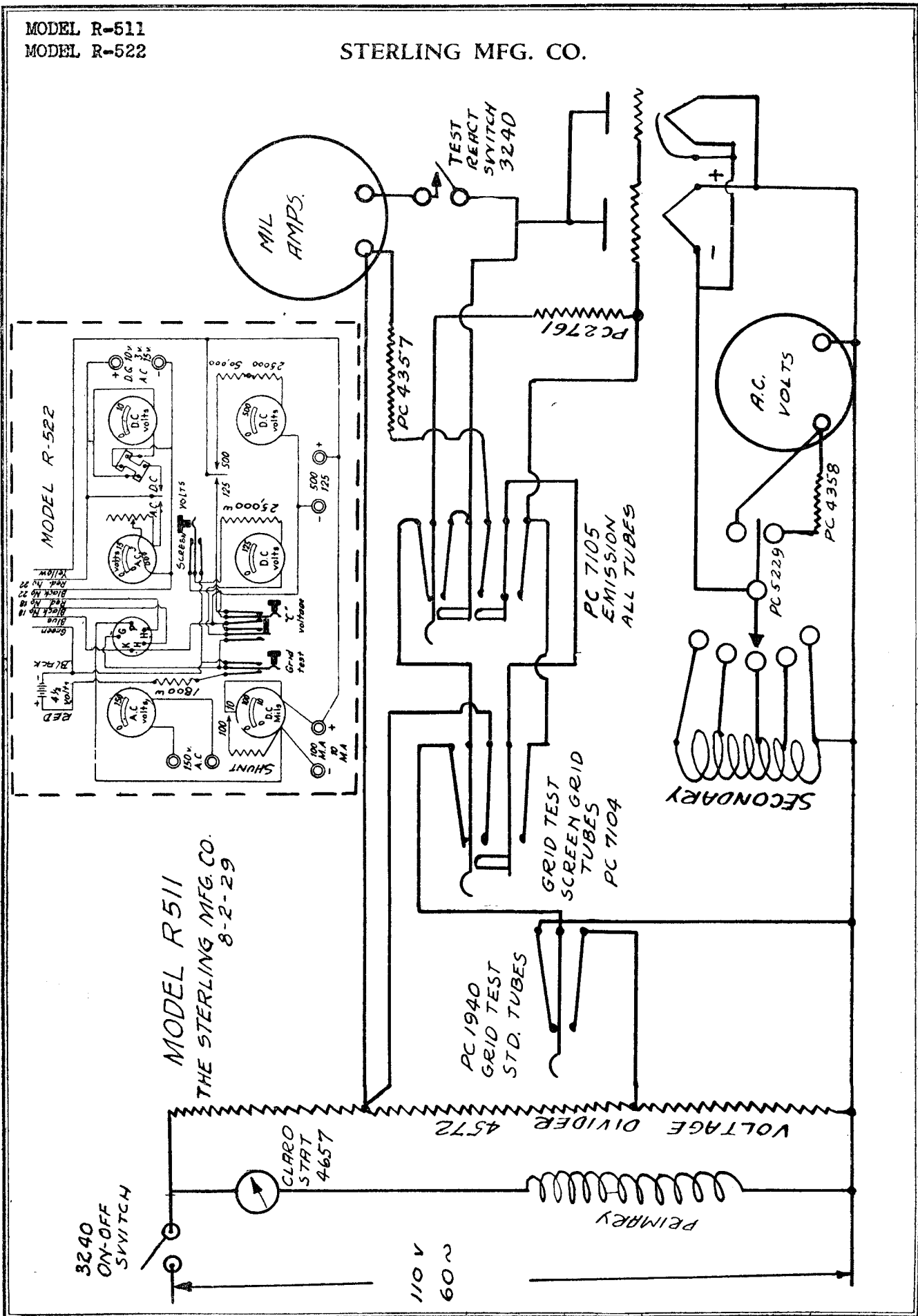
MODEL F
MODEL 8-Tube Receiver

STERLING MFG. CO.



MODEL R-511
MODEL R-522

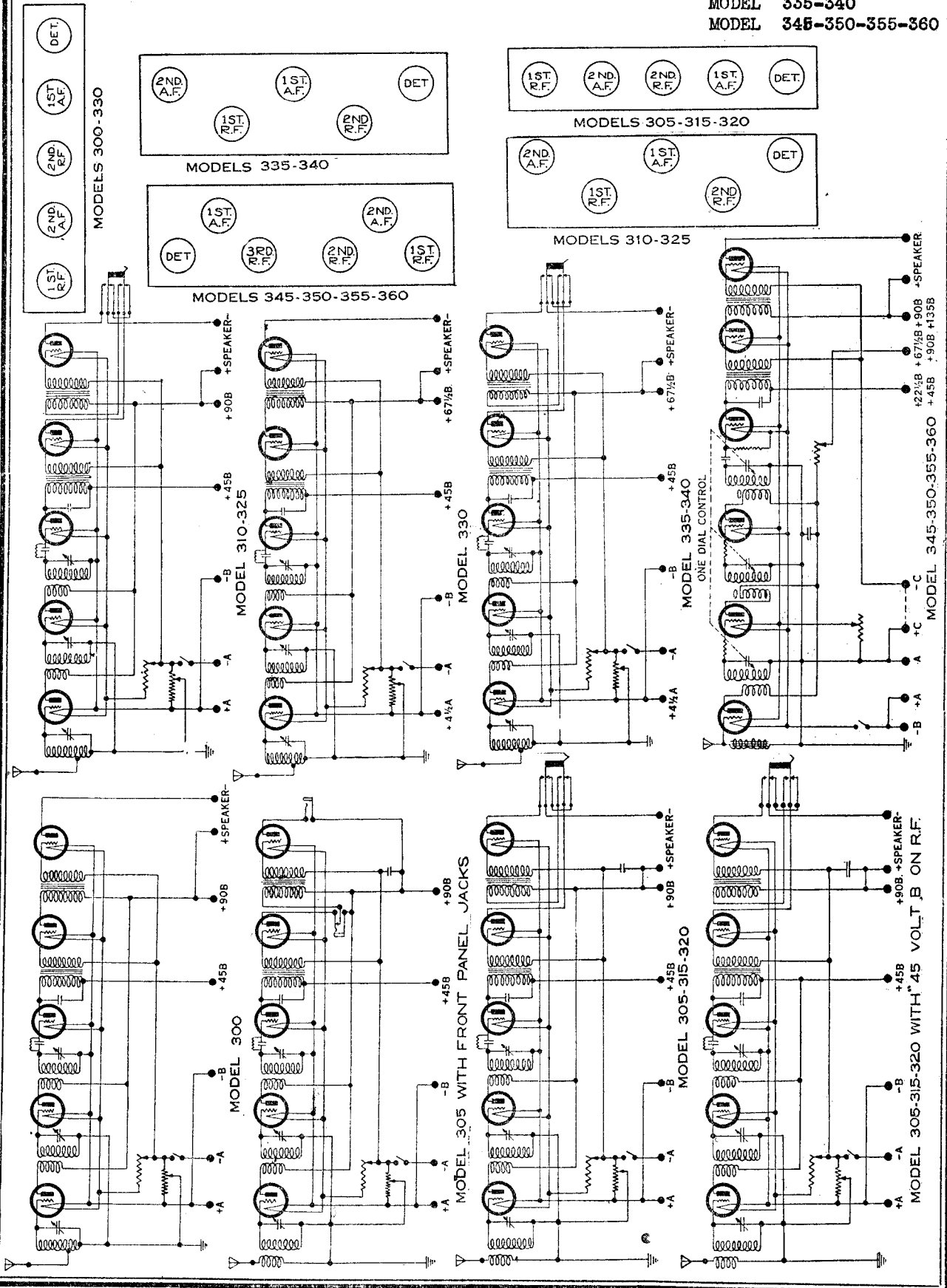
STERLING MFG. CO.



MODEL R511
THE STERLING MFG. CO.
8-2-29

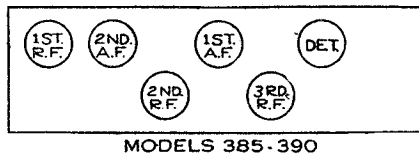
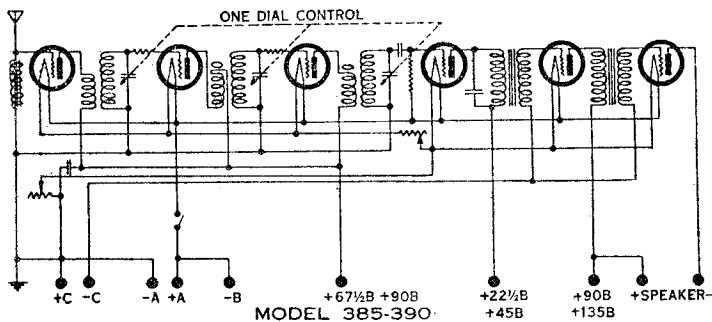
STEWART - WARNER CORP.

- MODELS 300, 305
- MODEL 305-315-320
- MODEL 310-325
- MODEL 330
- MODEL 335-340
- MODEL 345-350-355-360

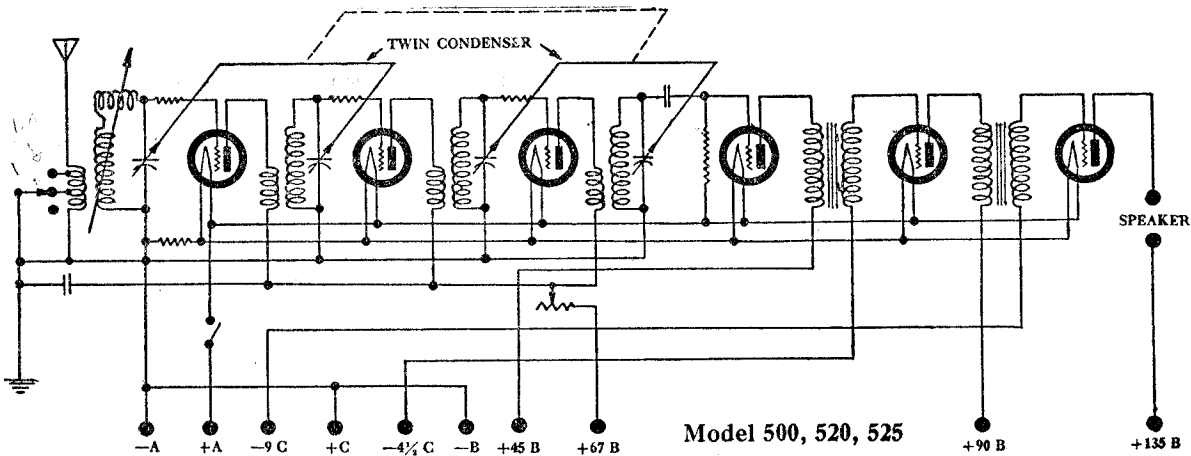


MODEL 385-390
 MODEL 500, 520, 525
 MODEL 530, 535
 MODEL 530, 535, 715, 720

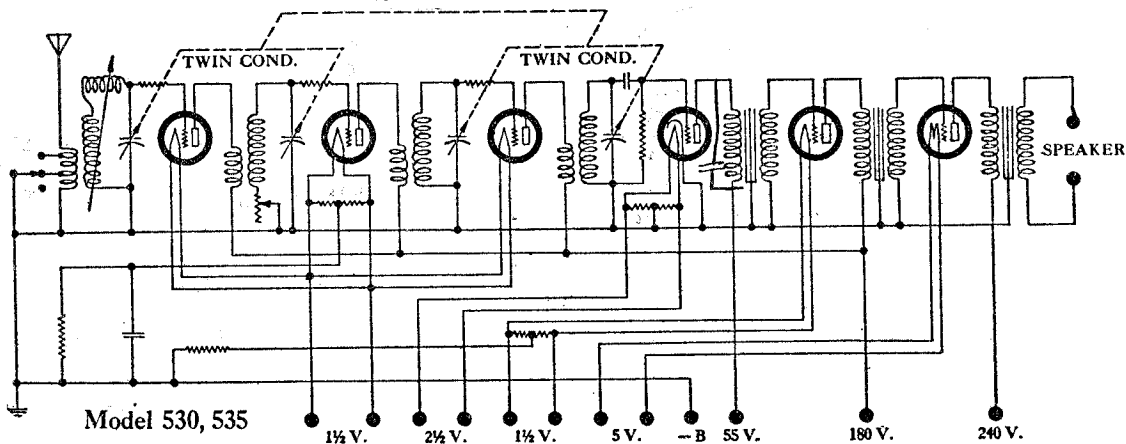
STEWART - WARNER CORP.



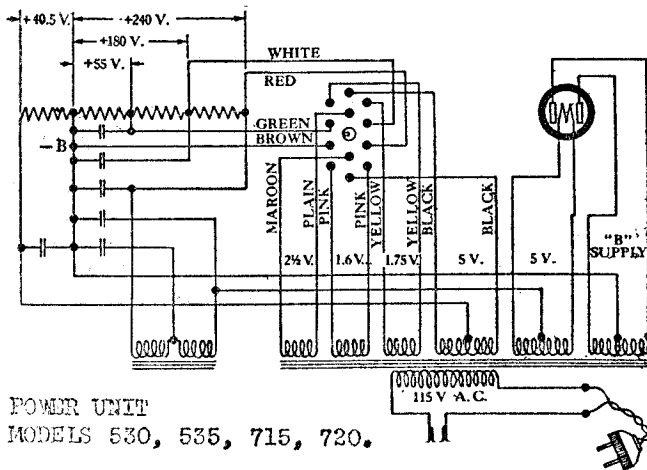
MODELS 385-390



Model 500, 520, 525

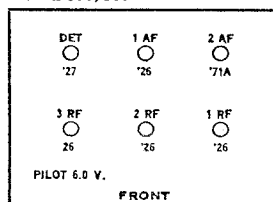


Model 530, 535

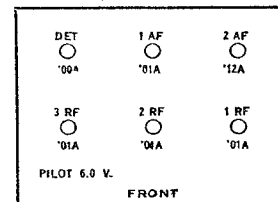


POWER UNIT
 MODELS 530, 535, 715, 720.

Models 530, 535

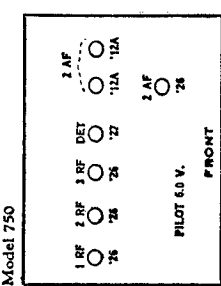
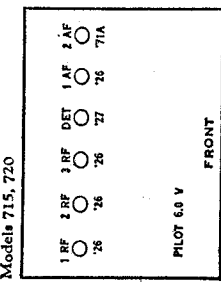
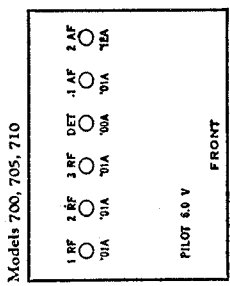
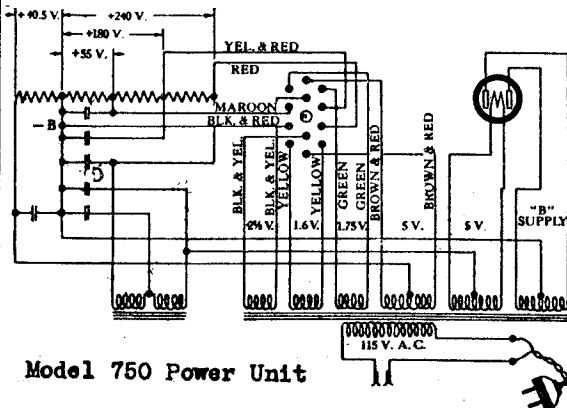
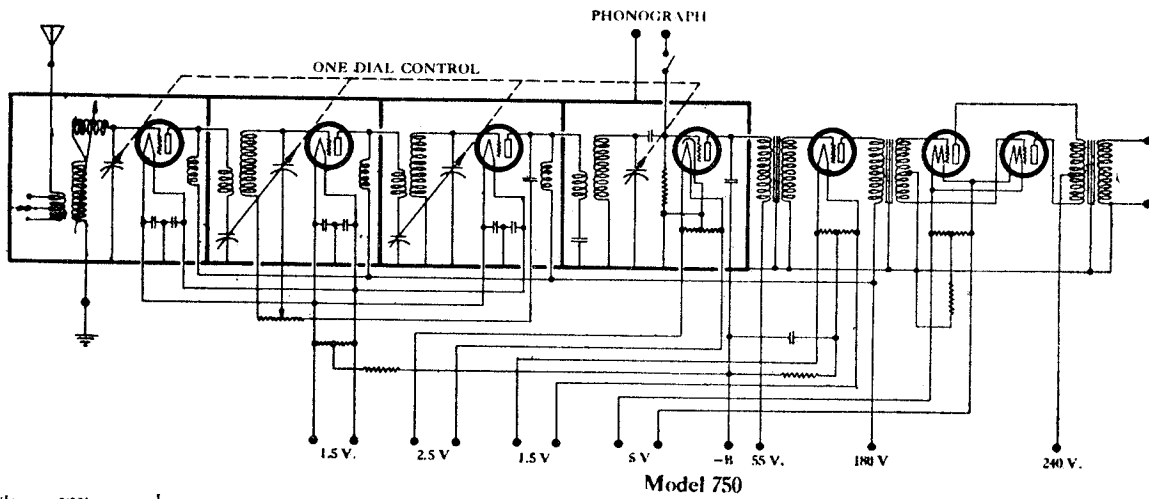
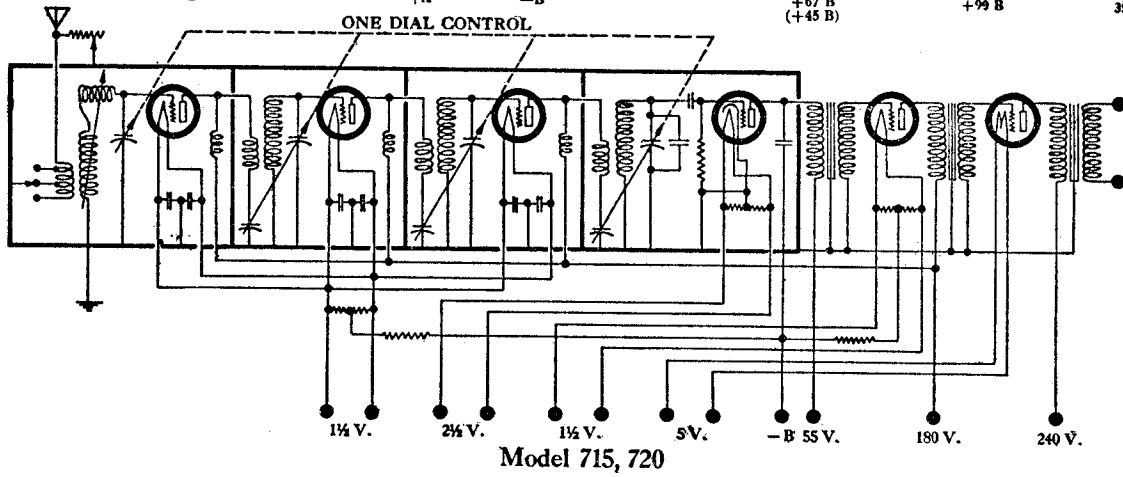
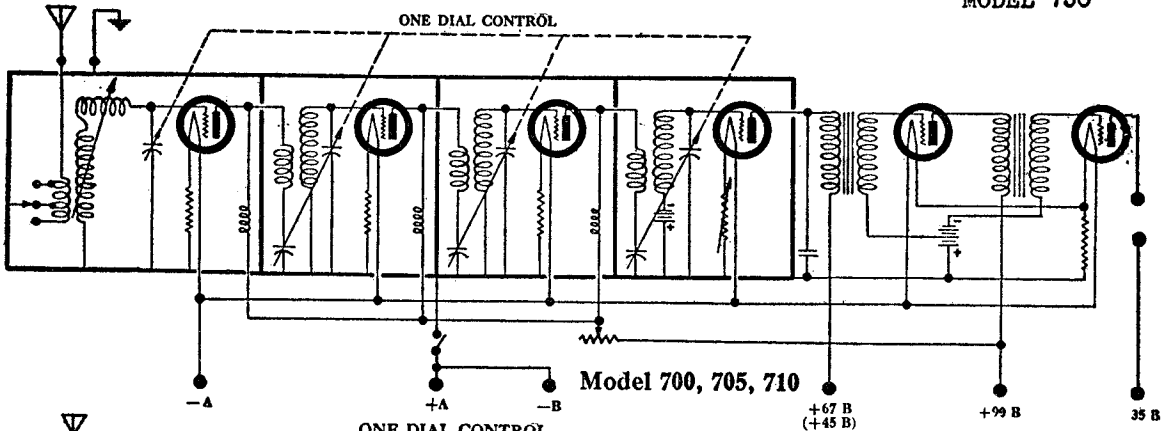


Models 500, 520, 525



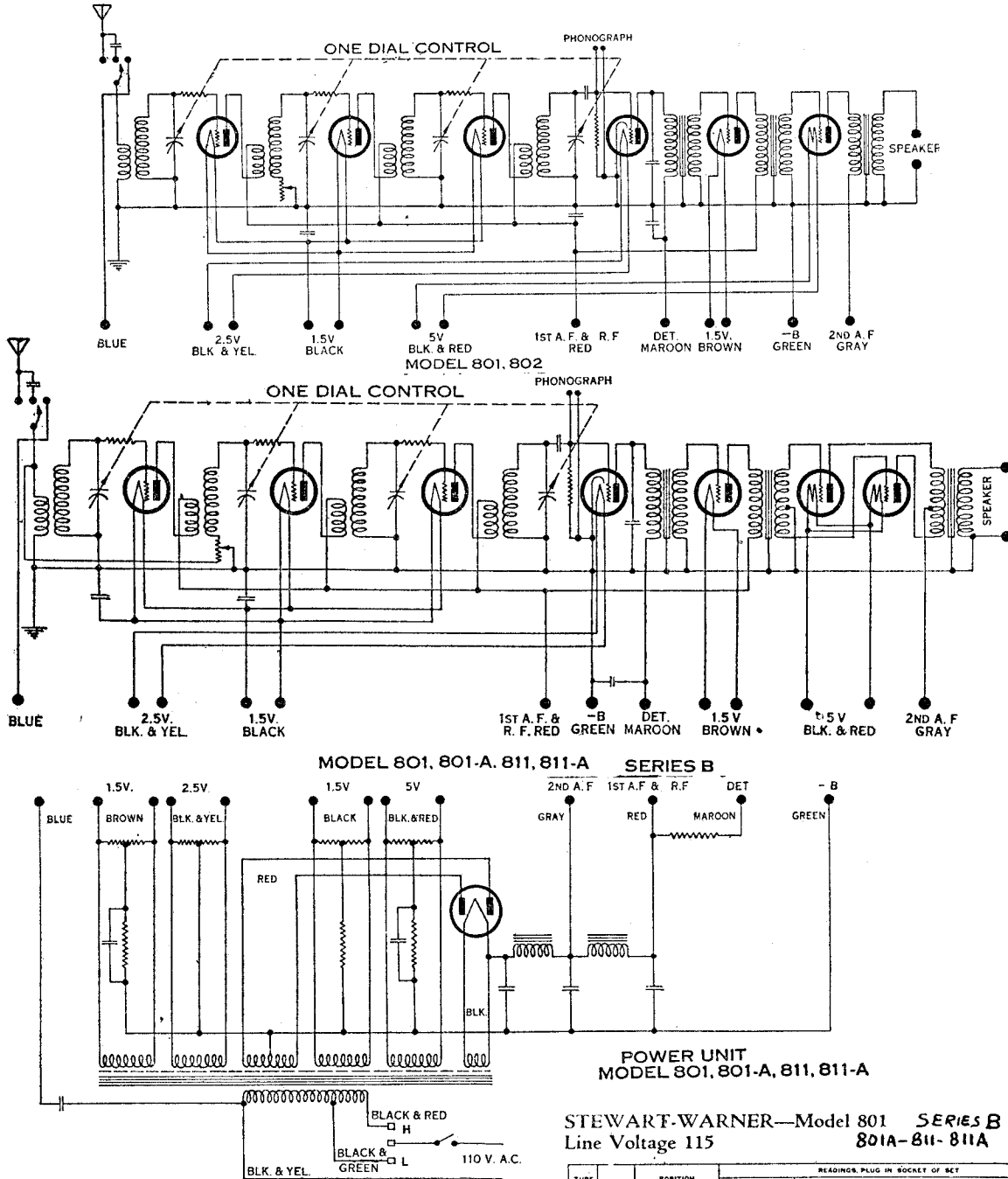
STEWART - WARNER CORP.

MODEL 700, 705, 710
 MODEL 715, 720
 MODEL 750



STEWART - WARNER CORP.

MODEL 801,802
 MODEL 801,801-A,811,811-A (Series B)
 MODEL PU 801,801-A,811,811-A
 Schematic, Voltage

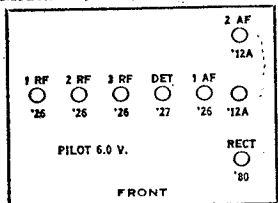


STEWART-WARNER—Model 801 SERIES B
 Line Voltage 115
 801A-811-811A

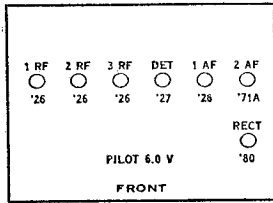
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, 2ND, 3RD, ETC.	TUBE OUT			READINGS PLUG IN SOCKET OF SET					
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE TEST M.A.	PLATE CHANGE M.A.		
1	226	1R.F.	1.46	157	1.33	155	14.8	—	2.9	9.7	6.8
2	226	2R.F.	1.46	158	1.33	156	14.8	—	2.3	9.2	6.9
3	226	3R.F.	1.48	158	1.32	156	14.8	—	1.9	9.5	7.6
4	227	DET.	2.40	132	1.98	25	0	—	1.4	1.45	0.08
5	226	1A.F.	1.62	175	1.42	146	12.5	—	3.3	4.1	0.8
6	112A	2A.F.	5.1	175	4.93	158	12.0	—	3.9	14.9	5.0
7	112A	2A.F.	5.1	175	4.95	158	12.0	—	3.3	14.2	4.9
8	260	Rectifier	5.7		4.79						
9											
10											

The values given apply to all Model 801 receivers, however, some of the early sets operated with lower "B" voltage than shown. On recent sets the "B" voltage has been increased approximately 10% (per cent) above values given in the chart.

Models 801, 801A, 811, 811A; Series B

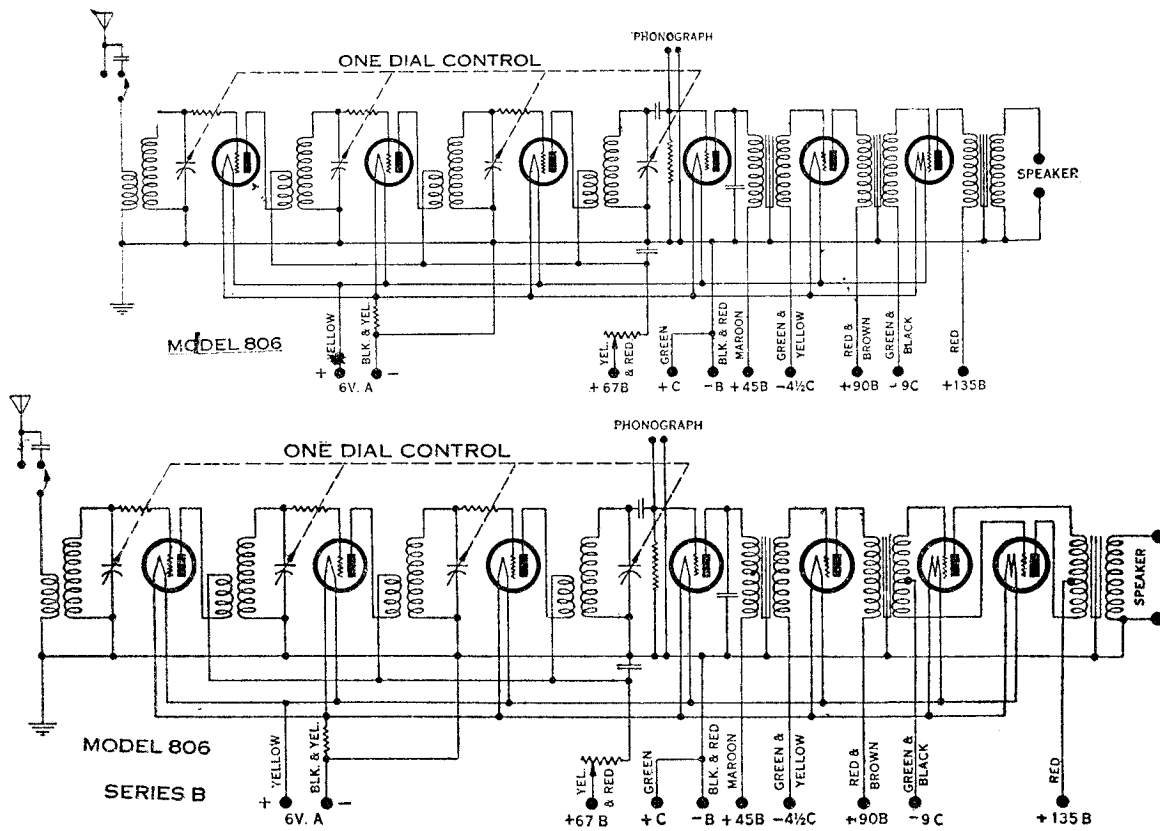


Models 801, 811, Series A



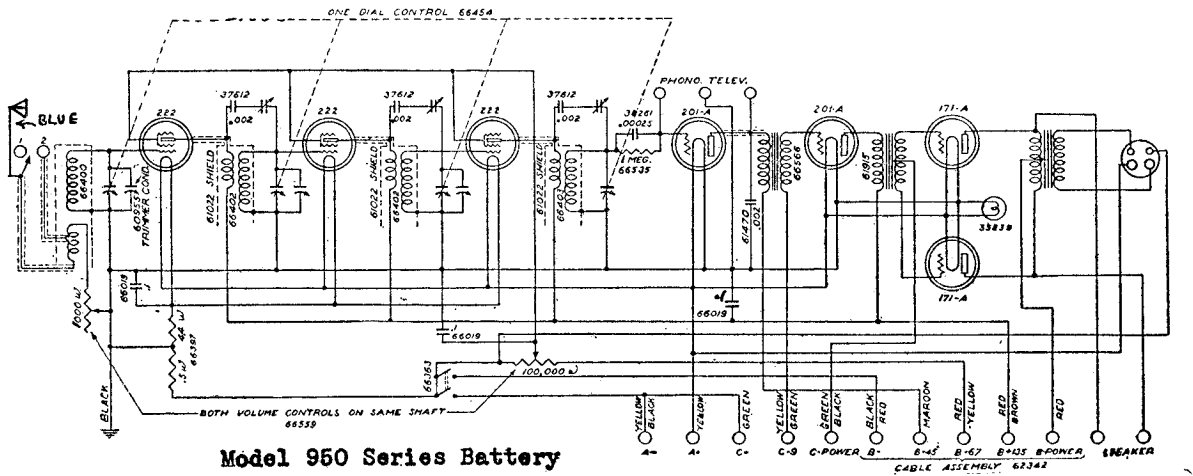
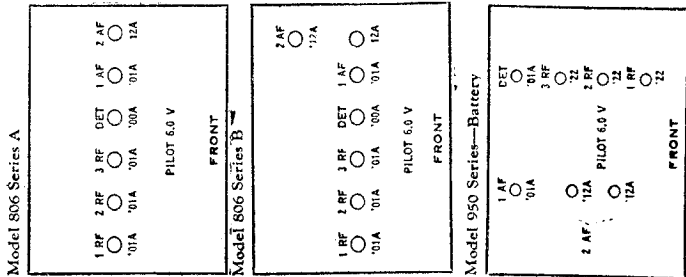
STEWART-WARNER CORP.

MODEL 806 (Series A)
 MODEL 806 (Series B)
 MODEL 950 Series (Battery)
 Schematic, Voltage



STEWART-WARNER—Model 950 A.C.
 Line Voltage 115—Volume Control Position Max

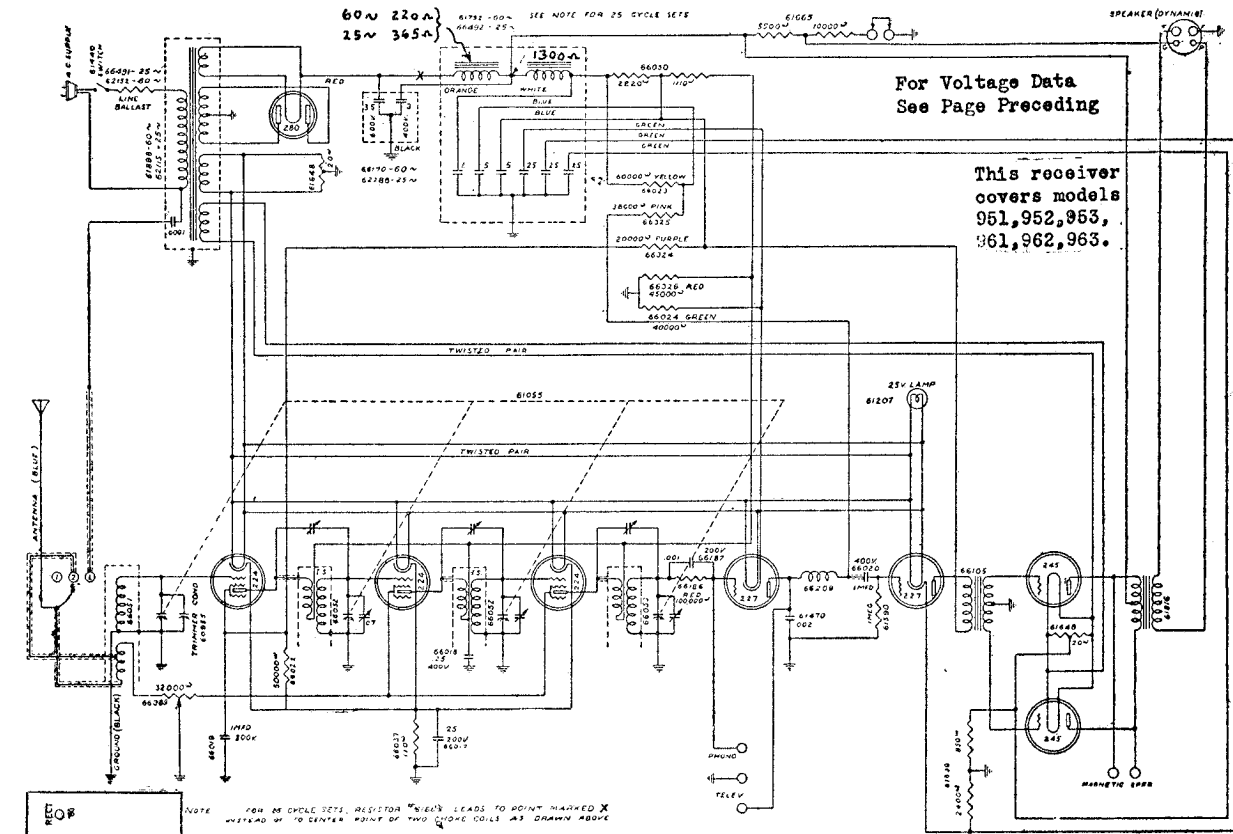
TUBE NO. IN CIRC.	TUBE	POSITION OF TUBE 1ST AF DET ETC.	TUBE CUV		READINGS PLUG IN SOCKET OF SET											
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	EXTRODY CONTROL HEATER PLATE VOLTS	PI-PLAT MA	PLATY GRID CHANGI MA	SCREEN GRID VOLTS					
1	254	1st AF	2.2	166	2	2	3.9	9	6.1	74						
2	224	2nd AF	2.2	166	2	2	3.9	9	6.1	74						
3	224	3rd AF	2.2	166	2	2	3.9	9	6.1	74						
4	227	Det.	2.2	189	18.5	18.5	6									
5	227	1st AF	2.5	182	13.5	13.5	5.8	6.8								
6	245	2nd AF	2.3	260	46		24	28								
7	245	2nd AF	2.3	260	46		24	28								
8	280	Rect.	4.7				90									



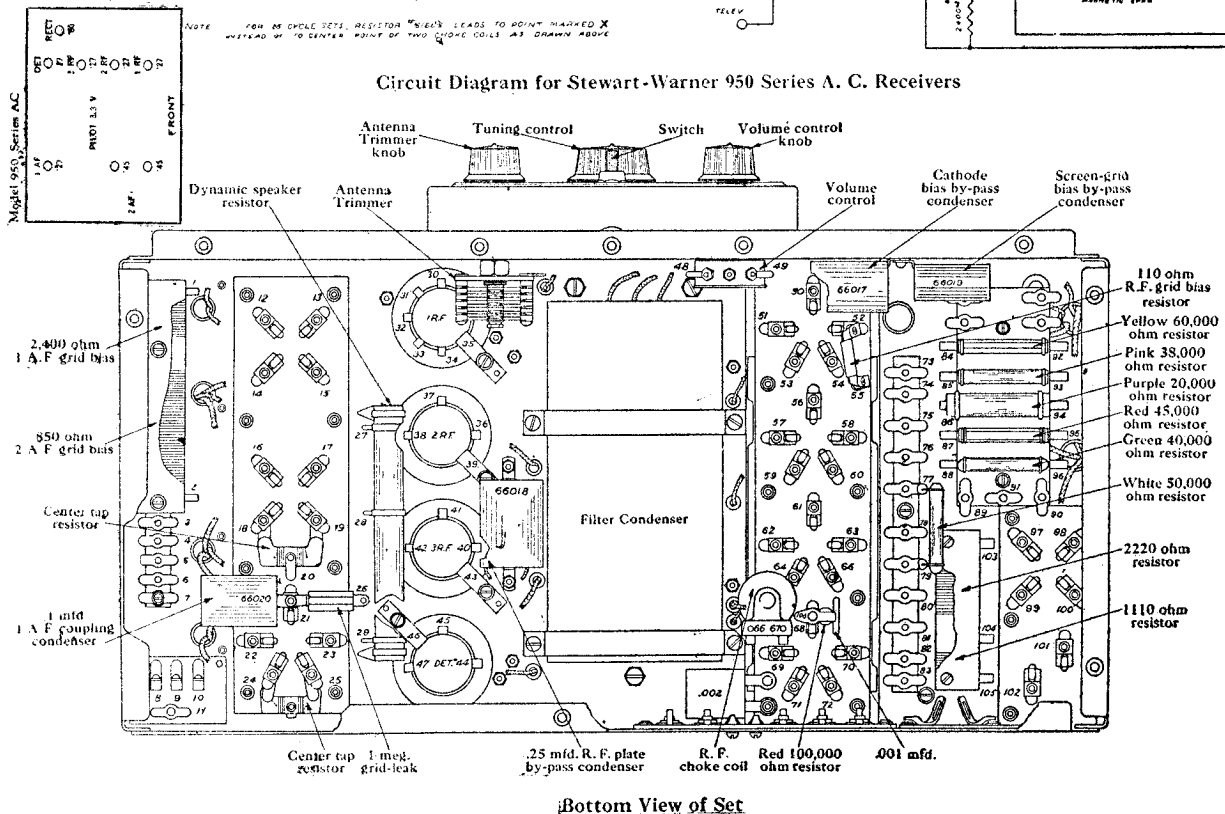
Model 950 Series Battery

MODEL 950 Series (AC)
Schematic, Chassis

STEWART-WARNER CORP.



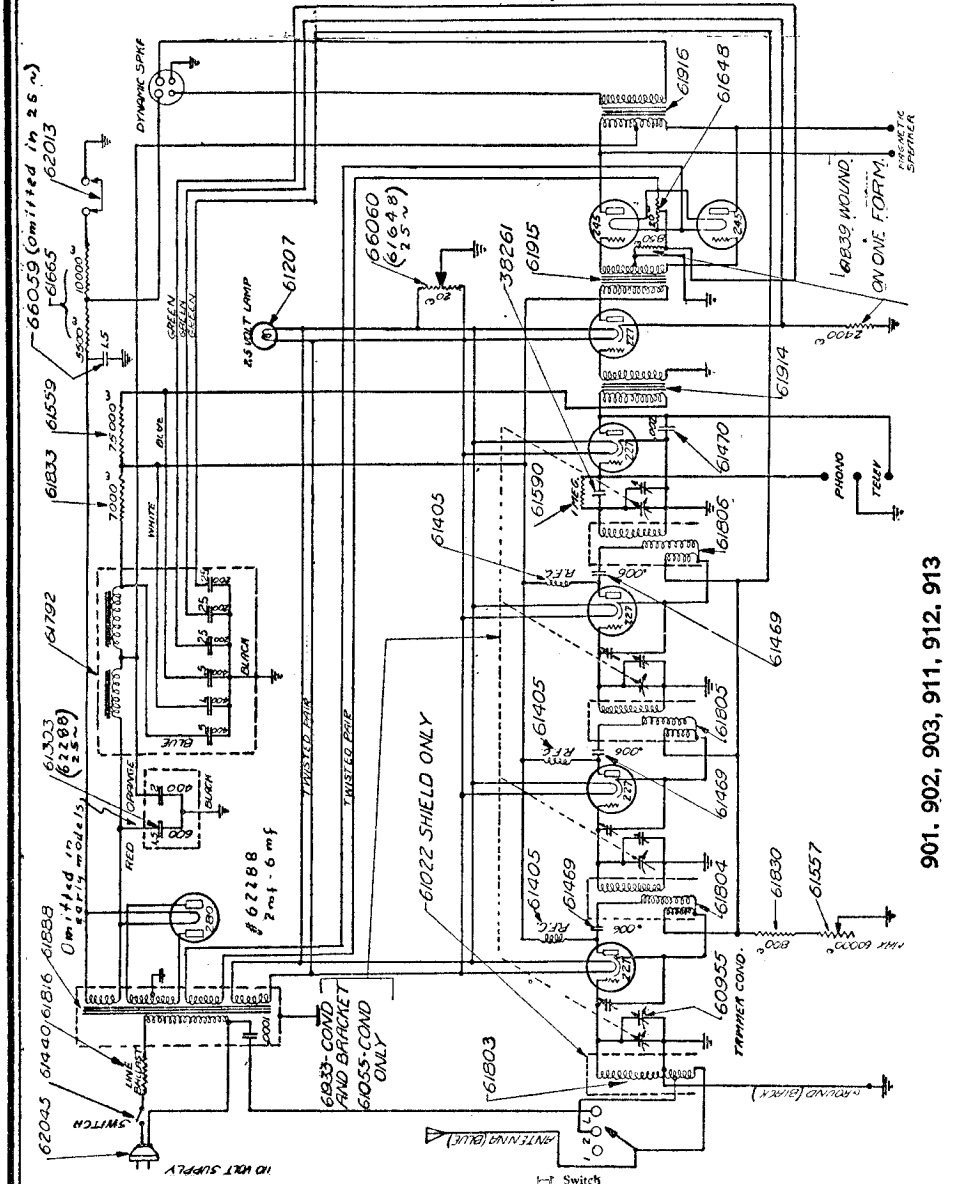
Circuit Diagram for Stewart-Warner 950 Series A. C. Receivers



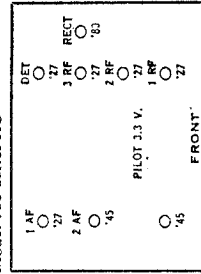
Bottom View of Set

STEWART-WARNER CORP.

MODEL 901, 902, 903
911, 912, 913
Schematic, Chassis



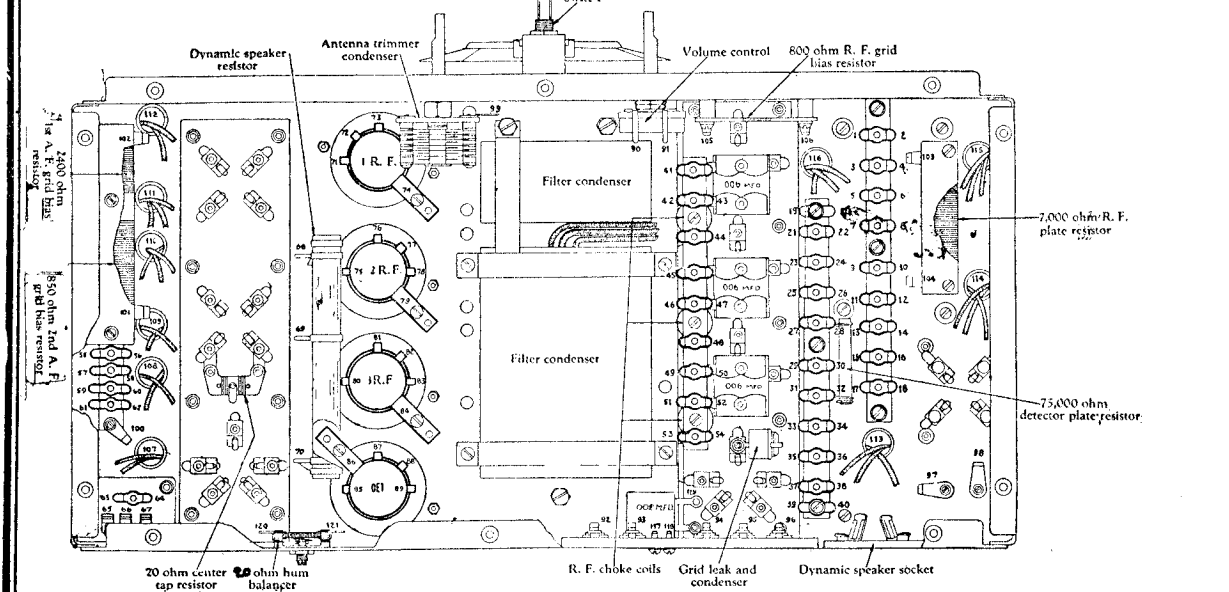
Model 900 Series AC



901, 902, 903, 911, 912, 913

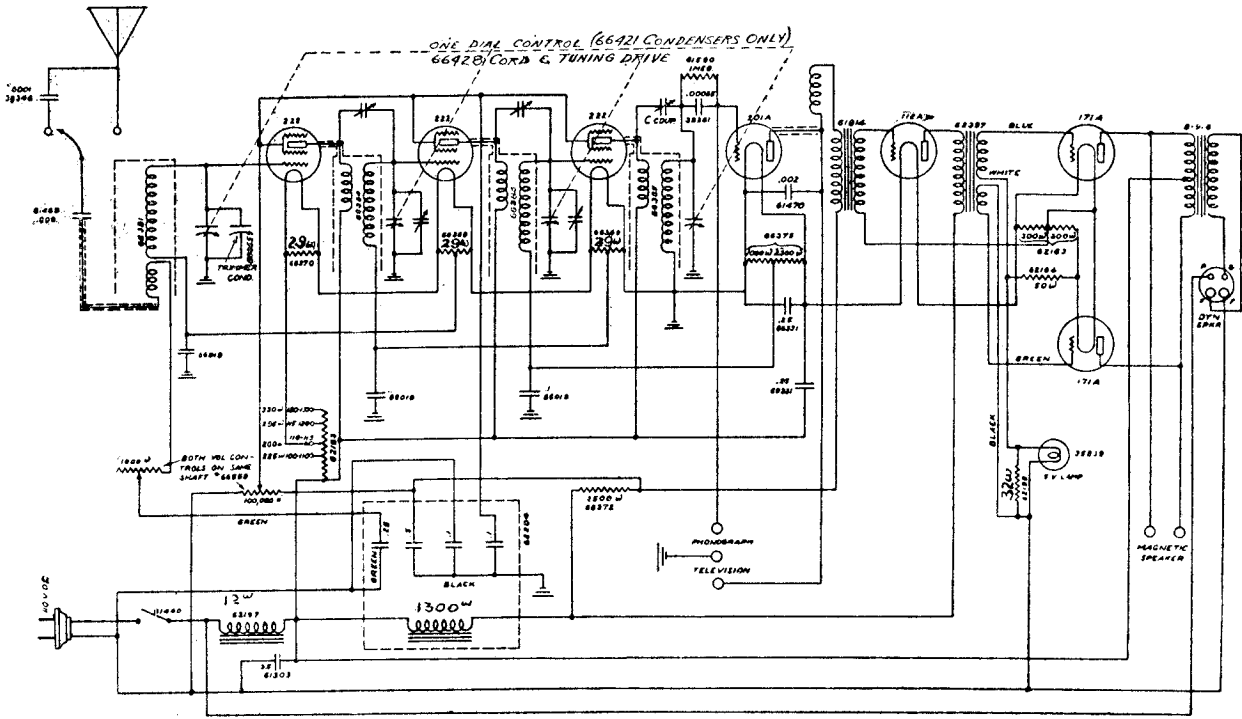
STEWART-WARNER—Series 900 A.C.
Line Voltage 115—Volume Control Position Max

TUBE	TYPE	POSITION	TUBE SOCKET		TUBE IN TESTER		TUBE TYPE
			100	100	100	100	
1	2Z5	1st AF	901	902	903	911	2Z5
2	6X4	2nd AF	901	902	903	911	6X4
3	6Y6	3rd AF	901	902	903	911	6Y6
4	6X5	2nd RF	901	902	903	911	6X5
5	6X6	1st RF	901	902	903	911	6X6
6	6Y7	PILOT	901	902	903	911	6Y7
7	6X4	2nd AF	901	902	903	911	6X4
8	6Y6	3rd AF	901	902	903	911	6Y6
9	6X5	2nd RF	901	902	903	911	6X5
10	6X6	1st RF	901	902	903	911	6X6
11	6Y7	PILOT	901	902	903	911	6Y7
12	6X4	2nd AF	901	902	903	911	6X4
13	6Y6	3rd AF	901	902	903	911	6Y6
14	6X5	2nd RF	901	902	903	911	6X5
15	6X6	1st RF	901	902	903	911	6X6
16	6Y7	PILOT	901	902	903	911	6Y7
17	6X4	2nd AF	901	902	903	911	6X4
18	6Y6	3rd AF	901	902	903	911	6Y6
19	6X5	2nd RF	901	902	903	911	6X5
20	6X6	1st RF	901	902	903	911	6X6
21	6Y7	PILOT	901	902	903	911	6Y7

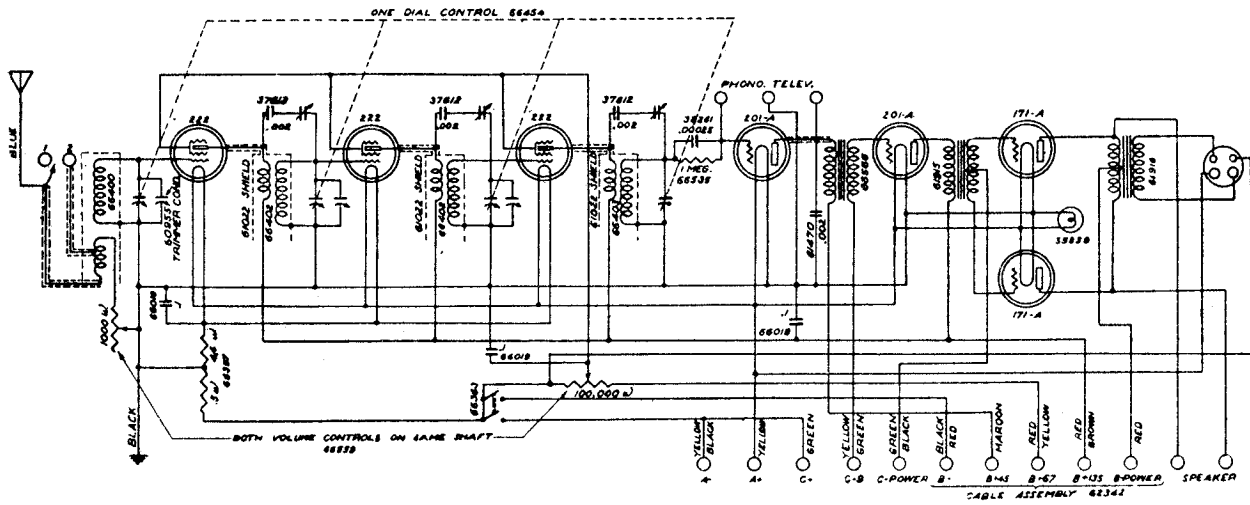


STEWART-WARNER CORP.

MODEL 971, 972, 973 DC
MODEL 980 Battery



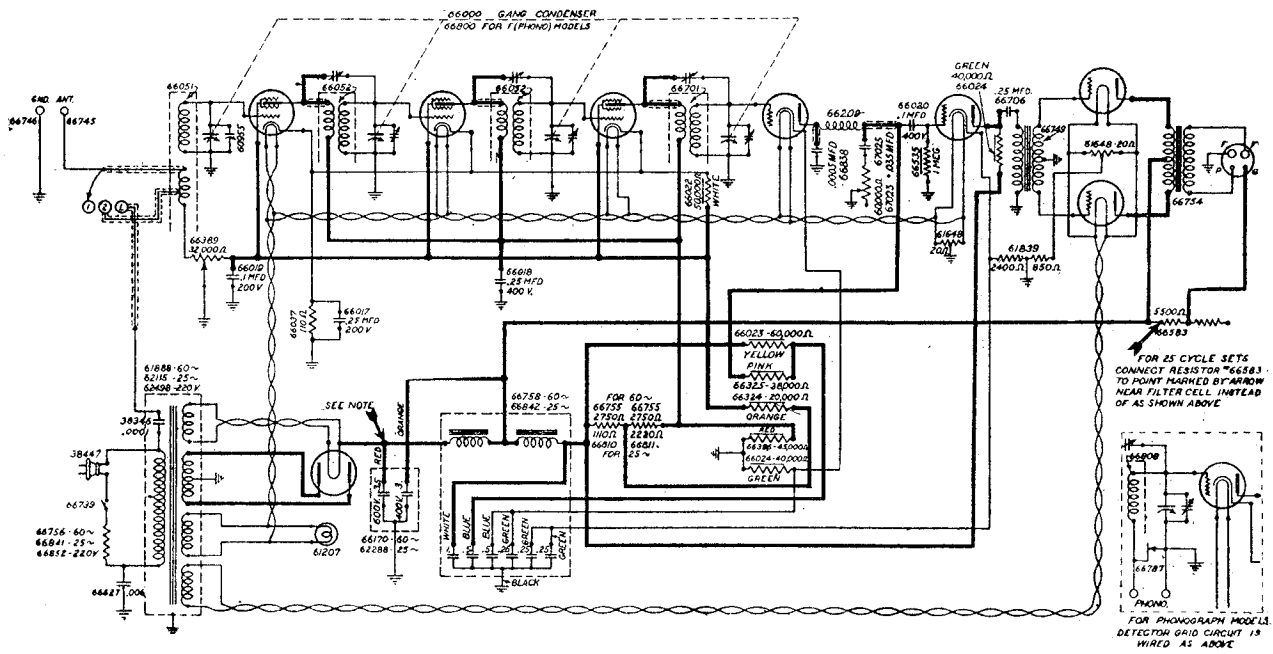
CIRCUIT DIAGRAM FOR STEWART WARNER SERIES 970 D.C. RADIO RECEIVERS



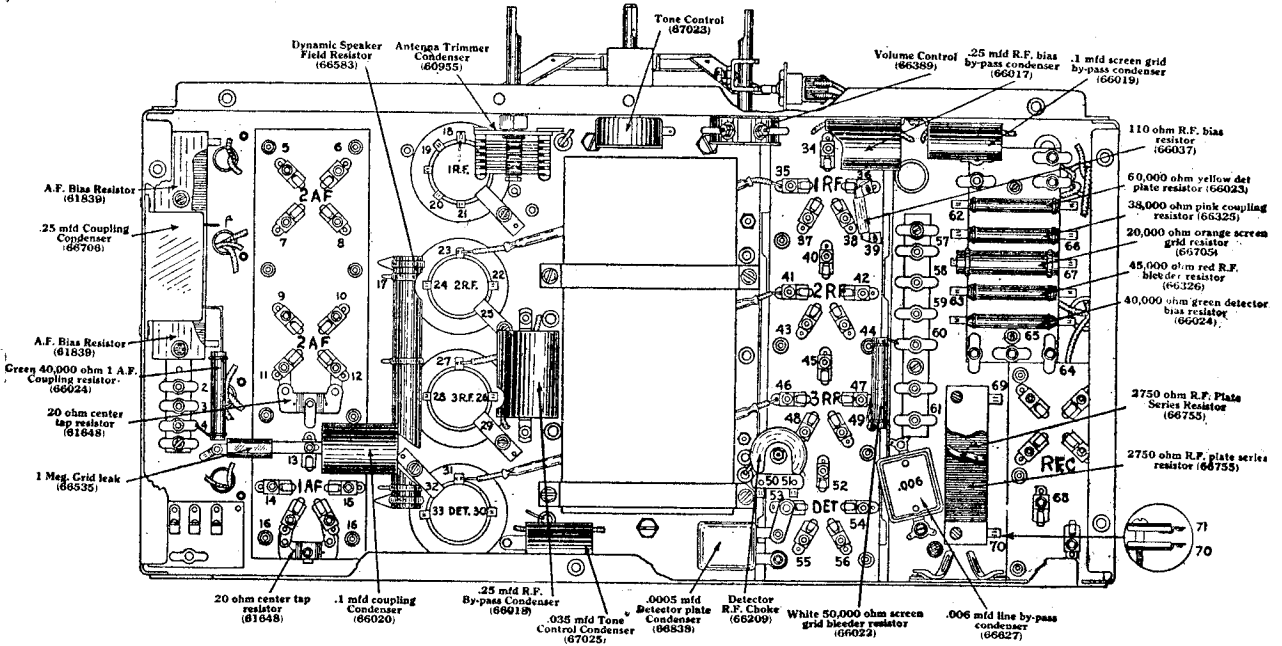
CIRCUIT DIAGRAM FOR STEWART WARNER 980 SERIES BATTERY RECEIVERS

MODEL R-100-A,B,E (AC)
 MODEL R-100 Series
 Schematic, Chassis

STEWART-WARNER CORP.



Stewart-Warner Model R-100-A, B, and E, Alternating Current Sets



BOTTOM VIEW OF R-100 SERIES A. C. RADIO RECEIVERS

Tube	Position	Fil.	Plate	Grid	Screen	Plate Crnt.
224	1st RF	2.18	135	2.2	87	5.4
224	2nd RF	2.2	137	2.2	86	4.
224	3rd RF	2.22	136	2.2	86.5	4.9
227	Det	2.2	165	15.5	-	.5
227	1st AF	2.18	120	.6	-	3.6
245	Output	2.3	245	48.	-	27.
280	Rect	5.0				

Line voltage 115 V.C. Full
 Plate current is 50 mls per anode

STEWART - WARNER CORP

MODEL R-100-A
Continuity Tests

RECEIVER CONTINUITY TESTS

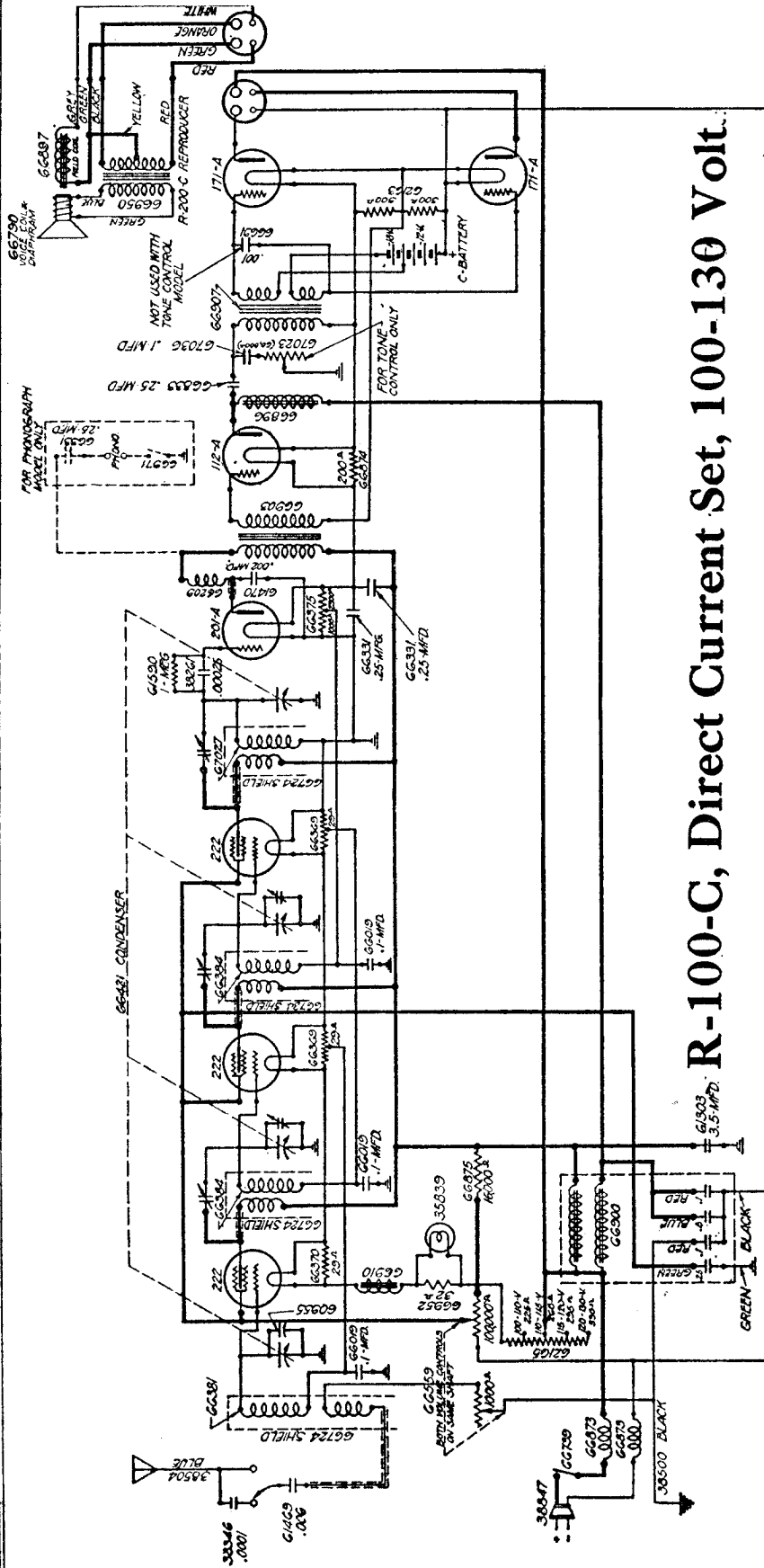
USE HIGH RESISTANCE VOLTMETER. TUBES AND SPEAKER MUST BE IN PLACE BUT SET DISCONNECTED AT SOCKET

CIRCUIT	TERMINALS	APPROX. NORMAL RESIST. READING	NO READING CAUSED BY	HIGH READING (LOW RESISTANCE) CAUSED BY
1 R.F. Plate	35 to 24	60 ohms*	Open 2 RF trans. primary	Shorted RF trans. primary
	35 to 63	17500 ohms*	Open red resistor	Grounded RF transformer primary Broken down or grounded red resistor
	35 to 70	5000 ohms*	Open plate resistor	Shorted "66755 series plate resistor
	35 to 57	6500 ohms	Open filter chokes	Shorted or grounded filter choke
1 R.F. Screen Grid	34 to 47	14000 ohms*	Open white resistor	Shorted or broken down white resistor
	34 to 67	14000 ohms*	Open orange resistor	Shorted or defective orange resistor
1 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open 1 RF transformer secondary	Shorted 1 R.F. transformer secondary
1 R.F. Cathode	30 to Grnd.	110 ohms	Open RF bias resistor	Short circuited RF bias resistor
2 R.F. Plate	41 to 28	60 ohms	Open primary 3d RF transformer	Short circuited RF trans. primary
2 R.F. Screen Grid	40 to 47	14000 ohms*	Open white resistor	Short circuited or broken down white resistor
2 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open secondary 2 R.F. transformer	Shorted 2 R.F. transformer secondary
2 R.F. Cathode	42 to Grnd.	110 ohms	Open RF bias resistor	Shorted RF bias resistor
3 R.F. Plate	46 to 33	60 ohms	Open 4th RF trans. primary	Shorted RF transformer primary
3 R.F. Screen Grid	45 to 47	15000 ohms*	Open white resistor	Shorted or broken down white resistor
3 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open 3d R.F. trans. secondary	Shorted 3d R.F. transformer secondary
3 R.F. Cathode	47 to Grnd.	110 ohms	Open RF bias resistor	Shorted RF bias resistor
Det. Plate	53 to 51	80 ohms	Open R.F. choke	Shorted RF trans. primary
	53 to 66	35000 ohms*	Open pink resistor	Shorted or defective pink resist.
	53 to 62	100000 ohms*	Open yellow resistor	Shorted or def. yellow resist.
	53 to 57	100000 ohms	Open filter choke	Shorted or def. yellow or pink resistors
Det. Grid	52 to Grnd.	4 ohms	Open 4th RF trans. secondary	Shorted 4th RF transformer secondary
Det. Cathode	54 to Grnd.	40000 ohms*	Open green resistor	Shorted or def. green resist.
1 A.F. Plate	14 to 4	40000 ohms	Open green plate resist.	Shorted or defective green plate resistor
	1 to Grnd.	1500 ohms	Open primary input trans.	Shorted input trans. primary
1 A.F. Grid	13 to Grnd.	Barely perceptible reading	Open grid leak	Shorted grid leak
1 A.F. Cathode	15 to Grnd.	2400 ohms	Open bias resistor	Shorted bias resistor
2 A.F. Plate	9 to 17	300 ohms)	Open output transformer primary	Shorted output trans. primary
	5 to 17	300 ohms)		
2 A.F. Grid	10 to Grnd.	5000 ohms)	Open input transformer secondary	Shorted input trans. secondary
	6 to Grnd.	4500 ohms)		

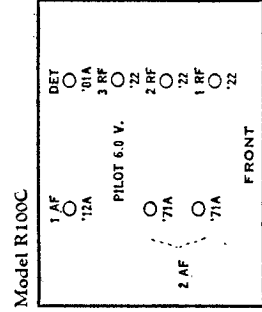
*The value obtained here is not the true resistance because of parallel resistance networks in the set. To obtain true resistance values, one side of the resistor must be unsoldered and then checked when out of the circuit.

MODEL R-100-C (DC)
Schematic, Voltage

STEWART - WARNER CORP.



R-100-C, Direct Current Set, 100-130 Volt.



Model R100C

All screen grid, control grid, and plate voltages are taken with respect to the **NEGATIVE** filament terminal of the tube.

★ This reading must be taken from negative filament to grid side of tuning coil because of the grid leak in this circuit.

VOLTAGE READINGS
LINE VOLTAGE 112

Tube Position	Filament	Screen Grid	Plate	Control Grid
1 R.F.	3	44	68	- 1.5
2 R.F.	3	47	71	- 1.5
3 R.F.	3	51	74	- 1.5
Det.	4.25		69	+ 4.2 *
1 A.F.	4.25		92	- 3.7
2 A.F.	4.8		97	-14.8
2 A.F.	4.8		102	-15.2

VARIABLE RESISTORS: VOLUME CONTROLS AND RHEOSTATS

Model	Use In Set	Part No.	Resistances	Description
400	Filament Rheostat	18056	4.5 ohms	Wire-wound rheostat.
303	Volume Control	18057	200 ohms	Wire-wound potentiometer.
310	Filament Rheostat	31923	10 ohms	Wire-wound rheostat.
330	Volume Control	18057	200 ohms	Wire-wound potentiometer.
335	Filament Rheostat	34762	3.2 ohms	Wire-wound rheostat.
350	Volume Control	34763	100,000 ohms	Combination wire-wound and carbon strip variable resistor.
385	Filament Rheostat	18056	4.5 ohms	Wire-wound rheostat.
390	Volume Control	18056	4.5 ohms	Wire-wound rheostat.
520	Volume Control and Filament Switch	37040	175,000 ohms	Combination wire-wound and carbon strip variable resistor combined with filament switch.
525	Volume Control	37692	5,000 ohms	Combination wire-wound and carbon strip variable resistor.
530	Volume Control	37271	20 ohms	Wire-wound rheostat.
705	Detector Rheostat	35947	175,000 ohms	Combination variable resistor and filament switch.
710	Vol. Control & Switch	37995	5,000 ohms	Combination wire-wound and carbon strip variable resistor.
715	Volume Control	39256	10,000 ohms	Metal encased carbon strip variable resistor.
720	Volume Control	39725	175,000 ohms	Combination wire-wound and carbon strip variable resistor.
730	Volume Control	61557	60,000 ohms	Metal encased carbon strip variable resistor.
806	Volume Control	62983	15,000 ohms	Metal encased carbon strip variable resistor.
900 Series AC	Volume Control	66389	32,000 ohms	Metal encased carbon strip potentiometer.
930-1-2-3	Volume Control	66559	1,000 ohms and 100,000 ohms	Double unit metal encased carbon strip variable resistor.
950 Series AC	Volume Control	66559	1,000 ohms and 100,000 ohms	Double unit metal encased carbon strip variable resistor.
970-1-2-3	Volume Control	66389	32,000 ohms	Metal encased carbon strip potentiometer.
980-1-2-3	Volume Control	67023	60,000 ohms	Metal encased carbon strip variable resistor.
R100 A, B & F	Tone Control	66559	1,000 ohms and 100,000 ohms	Double unit metal encased variable resistor.
R100C	Volume Control			

VOLTAGE REGULATORS*

Model	Part No.	Description
900-1-2-3	61816	Machine Screw mounting.
	66547	Brown. Two threaded contact pins for mounting.
910-1-2-3	66412	Brown. Plug in type.
940-1-2-3	62151	Brown. Plug in type.
950-1-2-3	62152	Brown. Plug in type.
960-1-2-3	66491	Brown. Plug in type.
990-1-2-3	66514	Brown. Plug in type.
R-100-A	66756	Gold. Plug in type.
R-100-B	66841	Gold. Plug in type.
R-100-E	66852	Gold. Plug in type.

* Note --- No resistance values are given since the resistance of all voltage regulators varies widely with temperature and current flowing through the wire.

WIRE-WOUND RESISTORS

SHOWN APPROXIMATELY HALF SIZE

38918 1000 ohms. Grid resistor. Used in 800 Series receivers.

66370 29 ohms. 1 R. F. filament about. Used in 900 and R-100 Series D. C.

66637 110 ohms. R. F. bias. Used in 900 and R-100 Series A. C.

37821 20 ohms. Center tap resistor. Used in 500, 700, and 800 Series A. C. receivers.

66349 29 ohms. 2 R. F. filament about. Used in 900 and R-100 Series D. C. receivers.

61648 20 ohms. Center tap resistor. Used in 900, 900, and R-100 Series A. C. receivers.

37533 1.95 ohms. A. F. filament resistor. Used in 700 Series battery receivers.

35679 3.0 ohms. R. F. filament resistor. .58 ohms filament resistor. Used in Model 800 only.

39923 1000 ohms. 2 A. F. grid bias. Used in 800 A. C. Series B.

60297 10,000 ohms. 1 A. F. grid bias. Used in Model 811 only.

38879 4000 ohms. 1 A. F. grid bias. Used in Models 801 and 790.

39956 1425 ohms. 2 A. F. grid bias. Used in Model 790 only.

38409 20 ohms. Center tap resistor. Used in Model 800 and 800 Series A. C. receivers.

38882 2100 ohms. 2 A. F. grid bias in Model 811 and 800 Series A. Used also as R. F. grid bias in 800 A. C.

39468 1700 ohms. R. F. grid bias. Used in Model 790 only.

62199 32 ohms. Pilot light about. (2 A. F. grid bias.) Used in 080 D. C.

STEWART - WARNER CORP.

Resistor Data Part 1

Resistor Data
Part 2

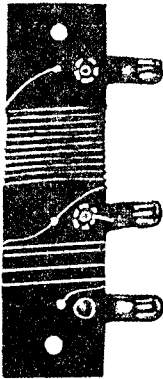
STEWART - WARNER CORP.

WIRE-WOUND RESISTORS

SHOWN APPROXIMATELY HALF SIZE



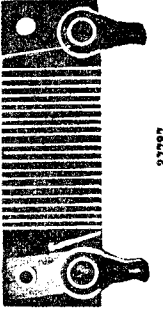
64089
2220 ohms and 1110 ohms. B supply resistor. Used in 900 and 960 Series A. C. receivers.



66387
4.4 ohms and .5 ohms. Filament resistor. Used in 960 Series battery receivers.



37559
58 ohms. Filament resistor. Used in 500 Series battery receivers.



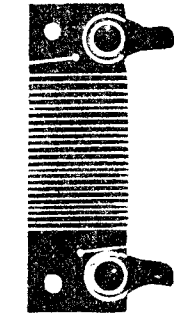
37287
5100 ohms. 1. A. F. grid bias. Used in 500 and 700 Series A. C. receivers.



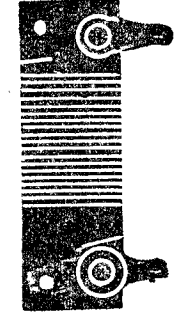
61833
7000 ohms. Screen plate resistor. Used in 900 Series A. C.



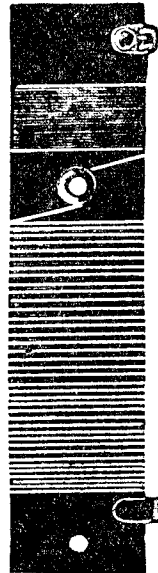
64375
2300 ohms and 1000 ohms. Detector filament shunt resistor. Used in 600 Series D. C. and R100C receivers.



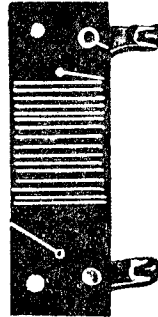
35733
1000 ohms. Grid resistor. Used in 1st R. F. of 500 Series A. C. and all R. F. of 500 Series battery.



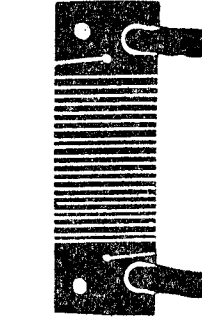
37726
1700 ohms. R. F. grid bias. Used in 500 and 700 Series A. C. receivers.



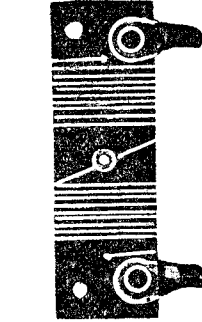
61839
850 ohms and 2400 ohms. A. F. grid bias. Used in 900, 960 and R-100 Series A. C.



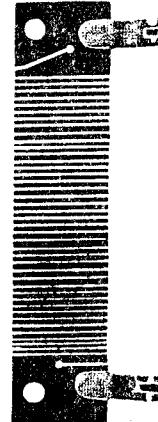
66372
2500 ohms. Detector plate resistor. Used in 960 Series D. C. receiver.



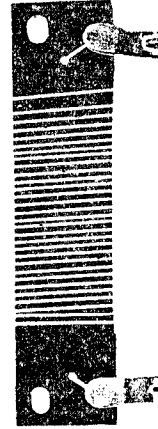
37763
1900 ohms. 2nd and 3rd R. F. grid resistor. Used in 500 Series A. C.



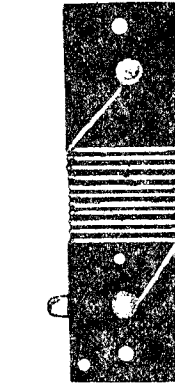
37629
20 ohms. Center tap. Used in 700 Series A. C. receivers.



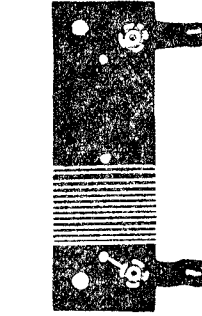
64755
2750 ohms. B supply resistor. Used in R-100-A and E.
66310
1110 ohms. Screen Grid supply resistor. Used in R-100-B
66311
2220 ohms. B supply resistor. Used in R-100-B.



64953
32 ohms. Pilot light shunt resistor. Used in R-100-C.



37583
58 ohms. Filament resistor. Used in 960 Series battery receivers.



61836
800 ohms R. F. grid bias. Used in 900 Series A. C.

A-F. Transformer Data

STEWART - WARNER CORP.

STEWART-WARNER AUDIO-TRANSFORMER DATA

Model of Receiver	Circuit in Which Used	Transformer Finish	Approximate Resistance	Color Code of Wires		Approximate Turns Ratio	Terminal Finish	Approximate Resistance	Primary	Secondary	Part Number	Price	Substitute Transformers
				Primary	Secondary								
300-340	Both Audio Stages	Brown	800 ohms	3 to 1	Soldering Lugs Used						38977	\$3.50	38977 61914 66566 66903
520-525	Both Audio Stages	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		39978	6.00	39978
705-710	First Audio	Black	2800 ohms	2 to 1				Plate-White B+ - Red	Grid-Green C- Black		61914	5.00	61914 66566 66903
800-810	Second Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		61915	5.00	61915 66566 66903
950-960	Both Audio Stages	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		61916	5.00	61916 66566 66903
960-990	Output	Black	400 ohms	1 to 1				Plate-Slate or Orange B+ - Black	Output-Green		66105	5.00	66105 66749
970	First Audio	Black	2800 ohms	2 to 1				Plate-White B+ - Red	Grid-Green C- Black		66105	5.00	66105 66749
970	Second Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		66105	5.00	66105 66749
970	Output	Black	400 ohms	1 to 1				Plate-Slate or Orange B+ - Black	Output-Green		66105	5.00	66105 66749
980	First Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		66105	5.00	66105 66749
980	Input Push-Pull	Black	2800 ohms	1.5 to 1				Plate-Orange B+ - Red	Grid #1-Blue Grid #2-Green C- White		61916	5.00	61916 66566 66903
980	Output Push-Pull	Black	600 and 600 ohms	1 to 1.2				Plate-White B+ - Red	Grid #1-Blue Grid #2-Green C- White		61916	5.00	61916 66566 66903
980	First Audio	Silver	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		61916	3.75	61916 66566 66903
801-811	Second Audio	Silver	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue		61916	3.75	61916 66566 66903

STEWART-WARNER AUDIO-TRANSFORMER DATA

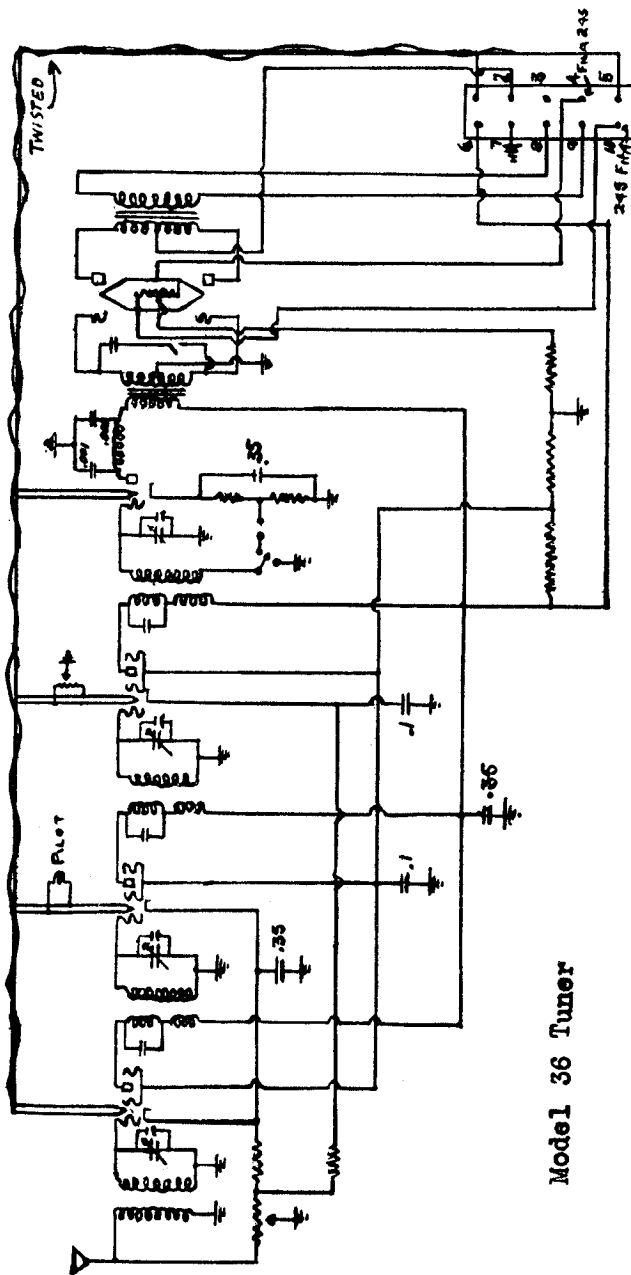
Model of Receiver	Circuit in Which Used	Transformer Finish	Approximate Resistance	Approximate Turns Ratio	Terminal Finish	Approximate Resistance	Color Code of Wires		Part Number	Price	Substitute Transformers	
							Primary	Secondary				
300-340	Both Audio Stages	Brown	800 ohms	3 to 1					38957	\$3.50	38957 61914 66566 66903	
520-525	Both Audio Stages	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	35134	5.00	35134
705-710	First Audio	Black	2800 ohms	2 to 1				Plate-White B+ - Red	Grid-Green C- Black	36944	5.00	36944
800-810	Second Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	35134	5.00	35134
950-960	Both Audio Stages	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	35134	5.00	35134
960-990	Output	Black	400 ohms	1 to 1				Plate-Slate or Orange B+ - Black	Output-Green	37598	5.00	37598
970	First Audio	Black	2800 ohms	2 to 1				Plate-White B+ - Red	Grid-Green C- Black	36944	5.00	36944
970	Second Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	35134	5.00	35134
970	Output	Black	400 ohms	1 to 1				Plate-Slate or Orange B+ - Black	Output-Green	37598	5.00	37598
980	First Audio	Black	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	35134	5.00	35134
980	Input Push-Pull	Black	2800 ohms	1.5 to 1				Plate-Orange B+ - Red	Grid #1-Blue Grid #2-Green C- White	66866	6.00	66866
980	Output Push-Pull	Black	600 and 600 ohms	1 to 1.2				Plate-White B+ - Red	Grid #1-Blue Grid #2-Green C- White	66866	6.00	66866
980	First Audio	Silver	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	38947	5.00	38947
801-811	Second Audio	Silver	2100 ohms	3 to 1				Plate-White B+ - Red	Grid-Green C- Blue	38977	5.00	38977
980	Output	Silver	400 ohms	1 to 1				Plate-Slate or Orange B+ - Black	Output-Green	38976	5.00	38976

*Resistance values given here are only approximate. They will vary widely with date of manufacture and material used. Where two resistance values are given they apply to both halves of a winding. The outer winding always has the higher resistance.
 †The color code given applies only to the cotton insulation of the terminal wire and not to the color of the spaghetti or cambric tubing around the wire.

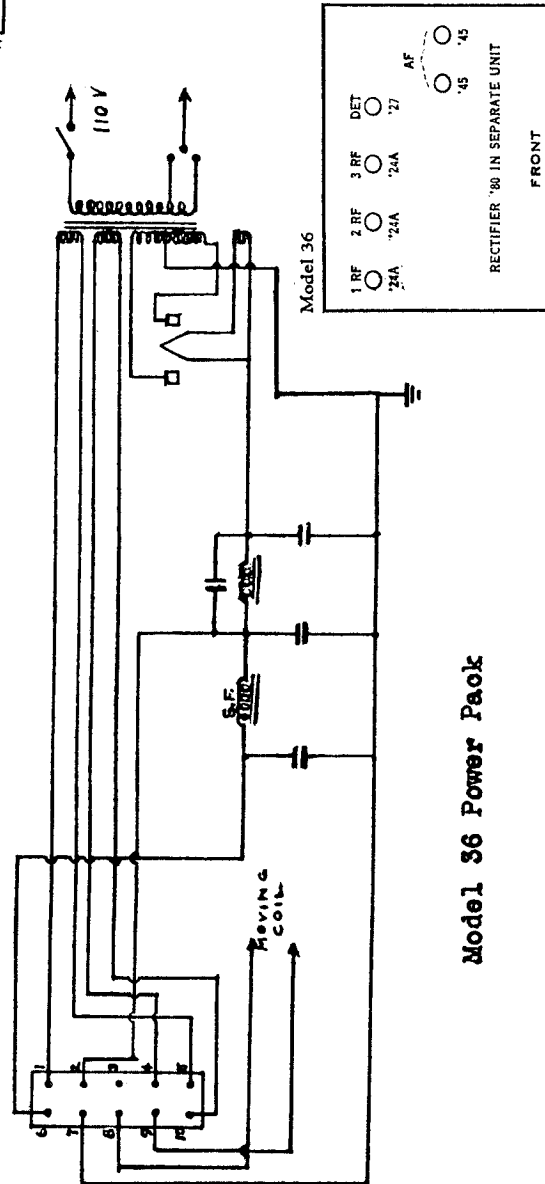
*Resistance values given here are only approximate. They will vary widely with date of manufacture and material used. Where two resistance values are given they apply to both halves of a winding. The outer winding always has the higher resistance.
 †The color code given applies only to the cotton insulation of the terminal wire and not to the color of the spaghetti or cambric tubing around the wire.

STORY & CLARK RADIO CORP.

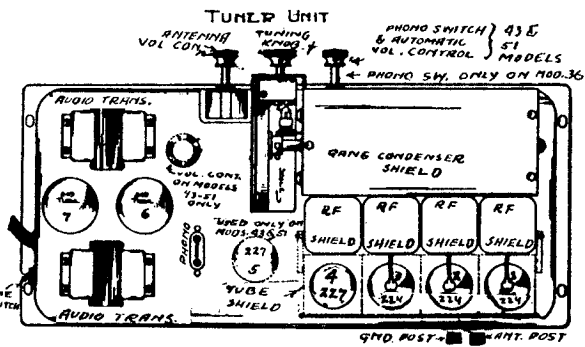
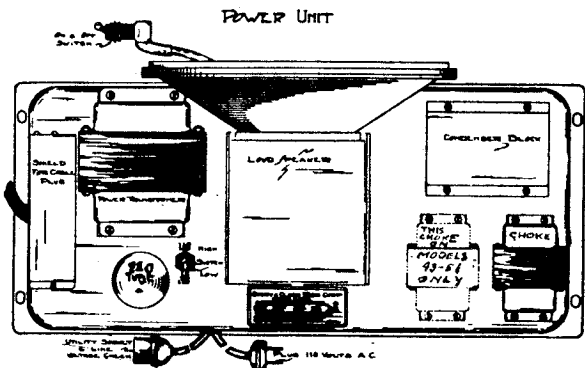
MODEL 36



Model 36 Tuner

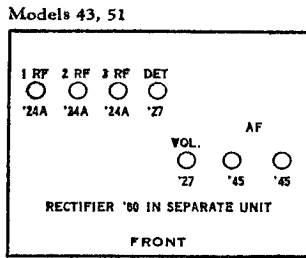
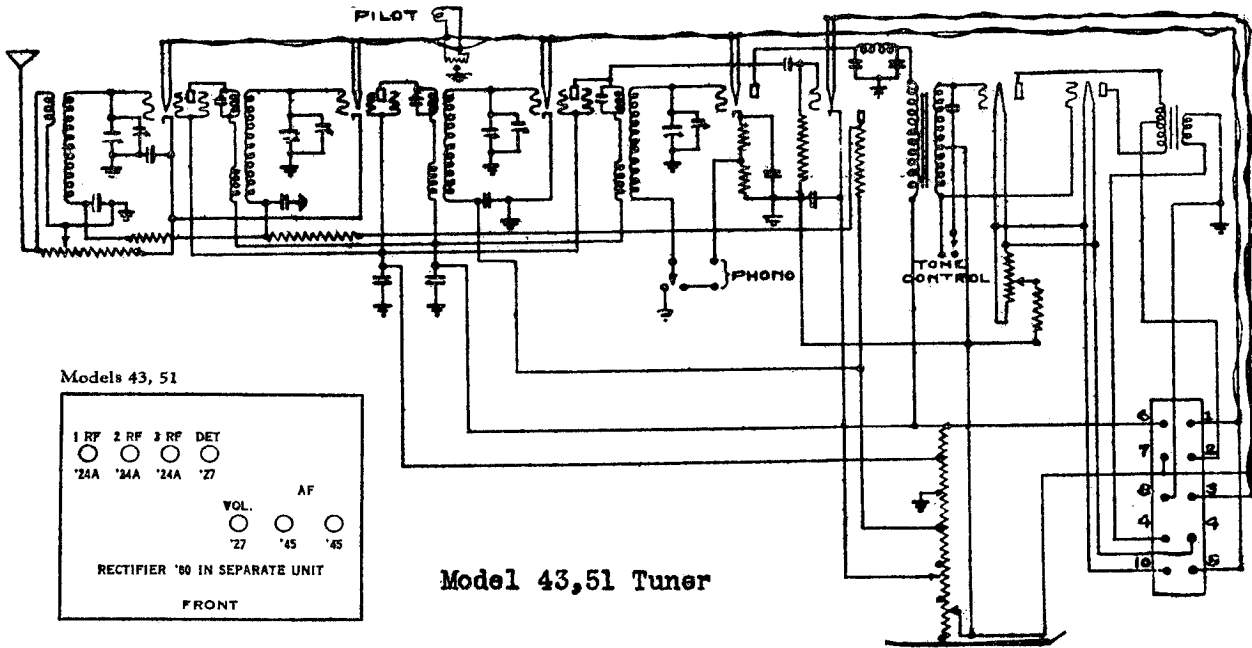


Model 36 Power Pack

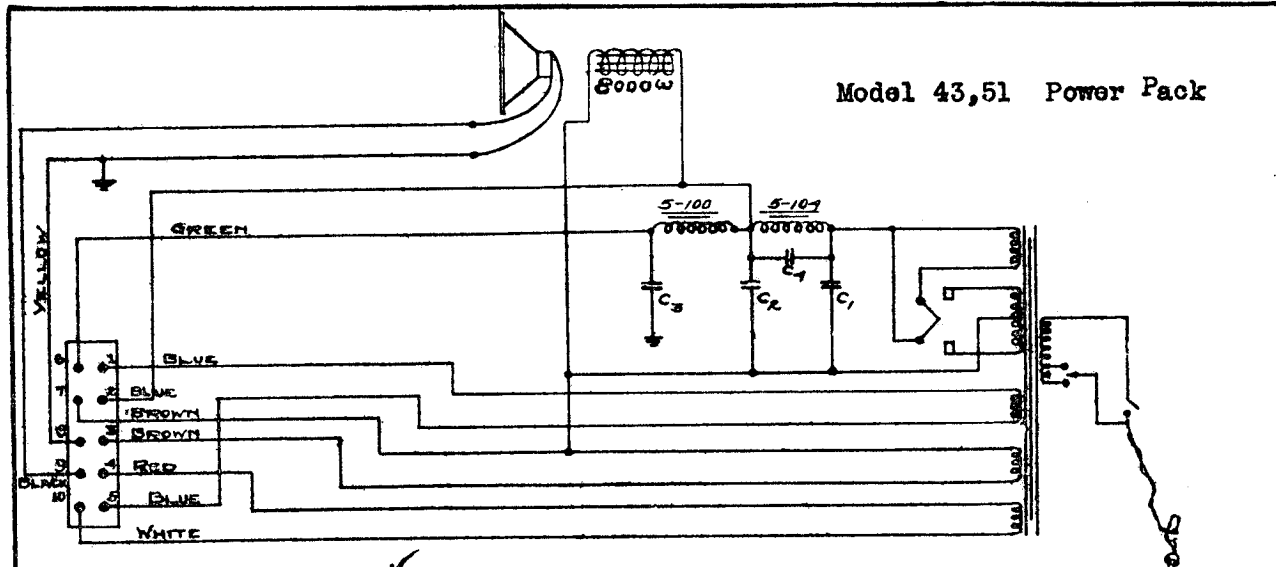


MODELS 43,51

STORY & CLARK RADIO CORP.



Model 43,51 Tuner



Model 43,51 Power Pack

NOTE

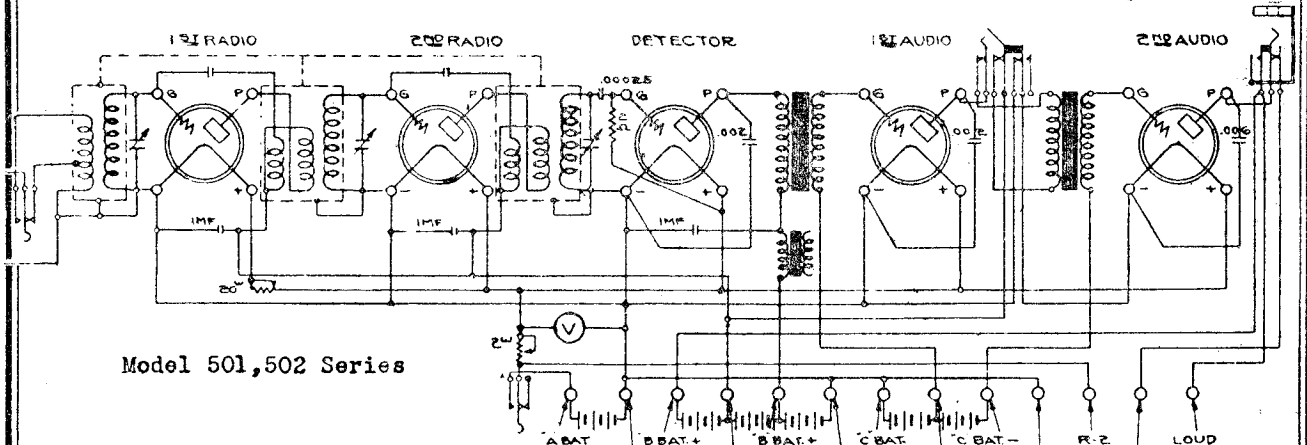
COLORLED LEADS ARE CABLE CONNECTIONS FROM POWER PACK TO R.F. UNIT.
 C₁ - 2MFD, C₂ - 2MFD, C₃ - 3MFD C₄ - .16MFD.
 FOR 25 CYCLE SUPPLY, LOW POTENTIAL SIDE OF C₃ RETURNS TO -B, AS C₂ & C₁. ALSO CONDENSER C₄ HAS A TOTAL CAPACITY OF 5MF

STORY & CLARK RADIO CORP.
 173 N. MICHIGAN AVE
 CHICAGO, USA

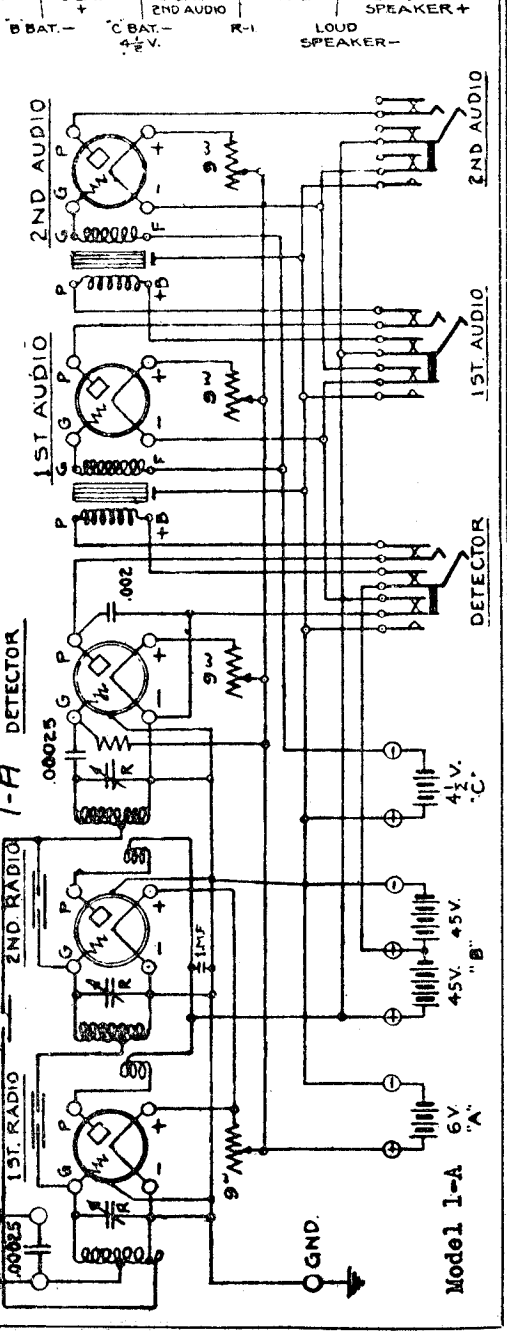
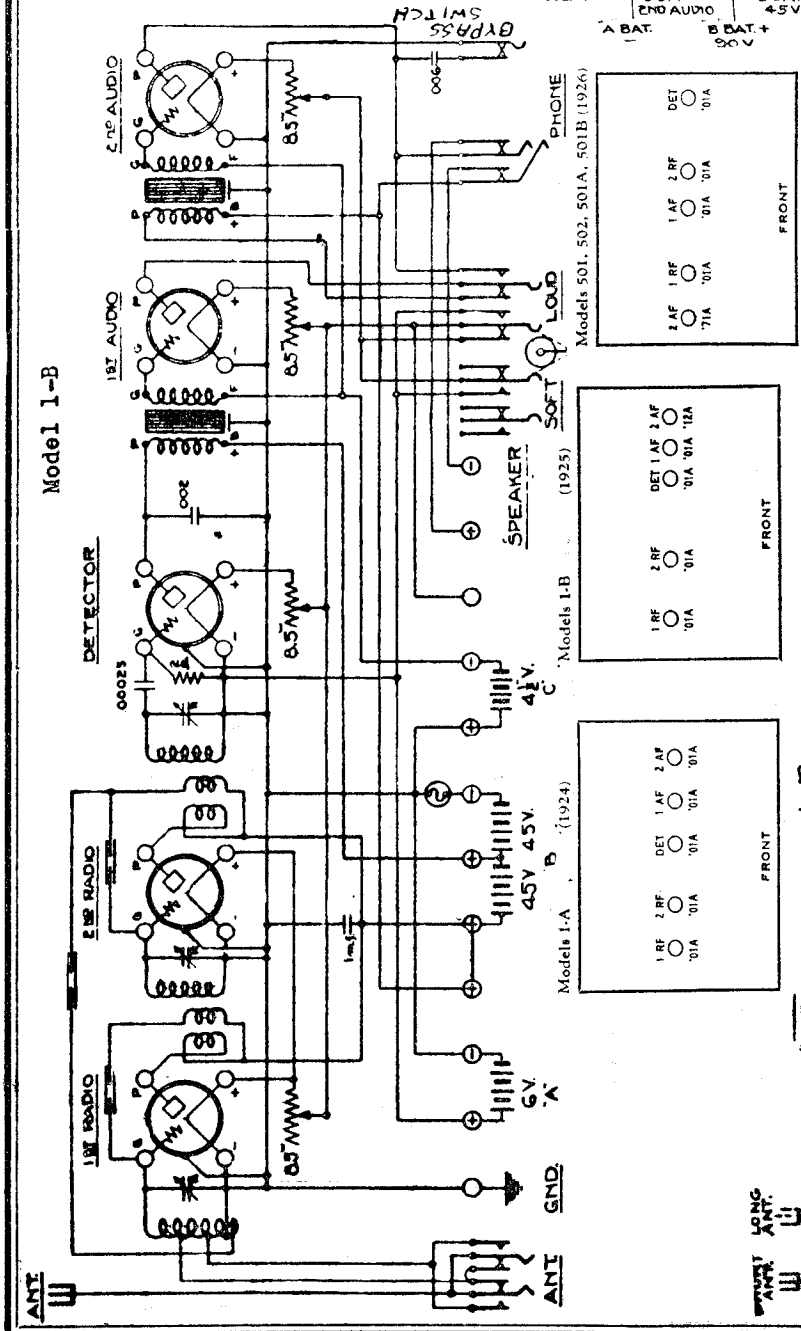
DATE	6-13-30
DRAWN	ZB88
CHECKED	
APPROVED	

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 1-A
 MODEL 1-B
 MODEL 501, 501-A, 501-B
 MODEL 502, 502-A, 502-B



Model 1-B



Models 501, 502, 501-A, 501-B (1926)

DET	01A
1 AF	01A 01A
2 AF	01A 01A

Models 1-B (1925)

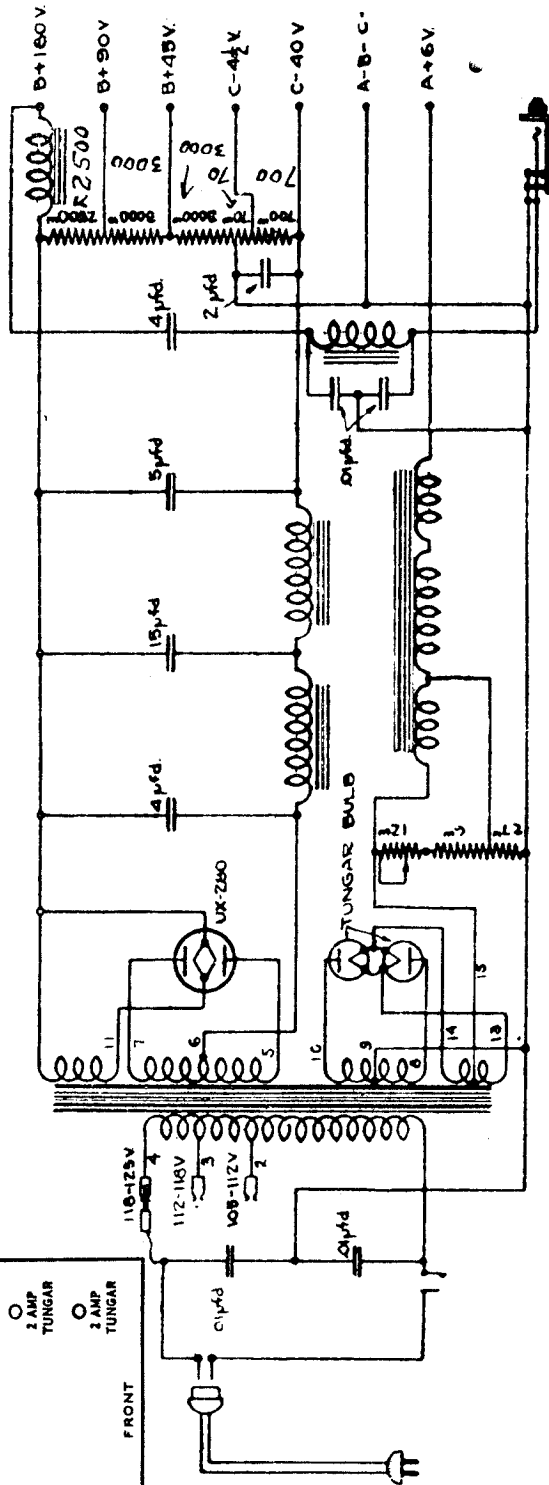
DET 1 AF	01A 01A 12A
2 AF	01A 01A
1 RF	01A 01A

Models 1-A, B (1924)

DET	01A 2AF
1 RF	01A 01A 01A
2 RF	01A 01A 01A

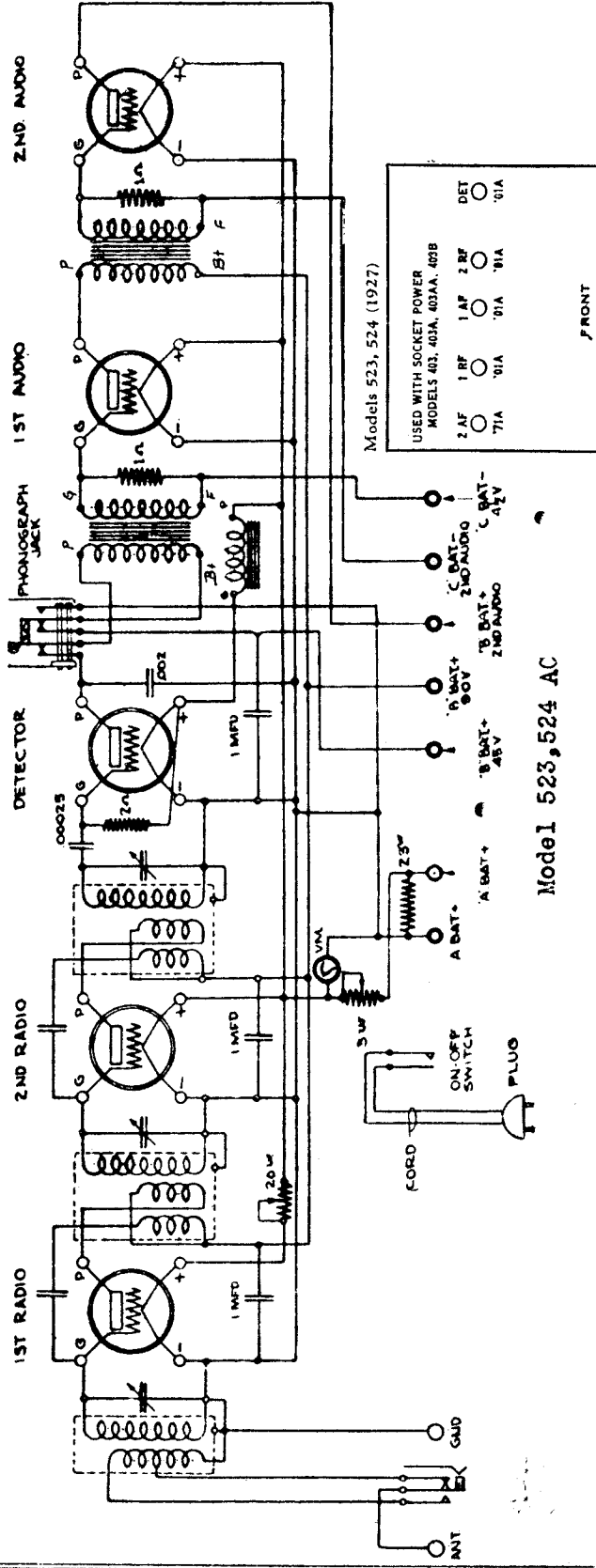
MODEL 403-AA
 MODEL 523,524 AC STROMBERG - CARLSON TEL. MFG. CO.

Model 403-AA



Models 403, 403A, 403AA, 403B (1927)

- | SOCKET POWER USED WITH MODELS | |
|-------------------------------|--------|
| RECT | 50 |
| 2 AMP | TUNGAR |
| 3 AMP | TUNGAR |



Models 523, 524 (1927)

- | USED WITH SOCKET POWER MODELS 403, 403A, 403AA, 403B | |
|--|-----|
| 2 AF | 71A |
| 1 RF | 91A |
| 1 AF | 91A |
| 2 RF | 91A |
| DET | 91A |

Model 523,524 AC

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 403, 403-A

MODEL 403-B

MODEL 301-A

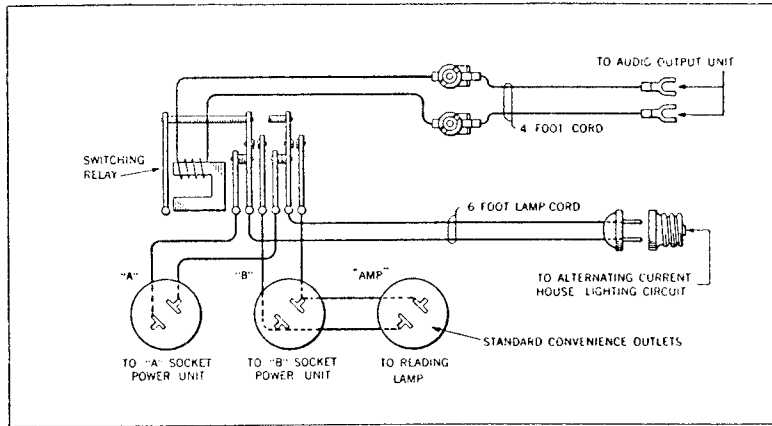
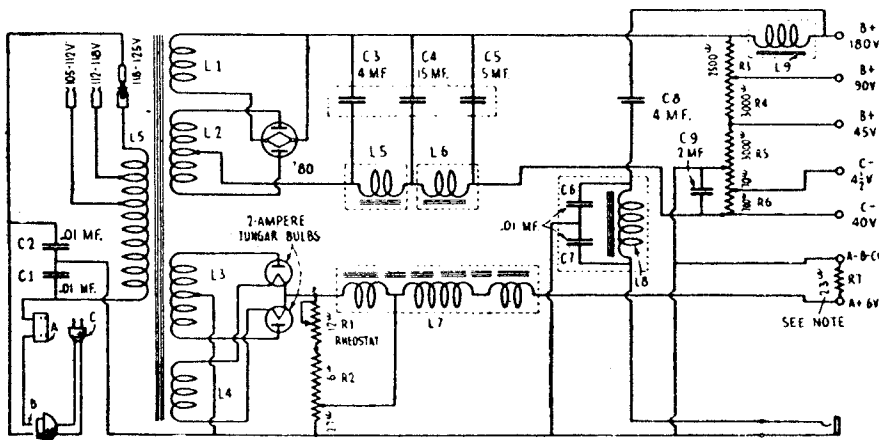
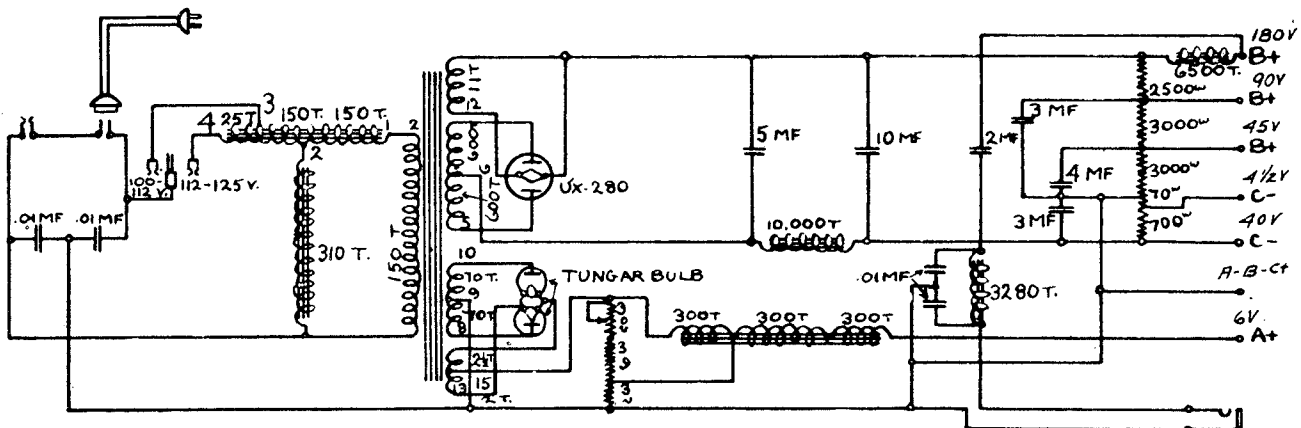


Diagram of Connections in No. 301-A Power Switching Relay



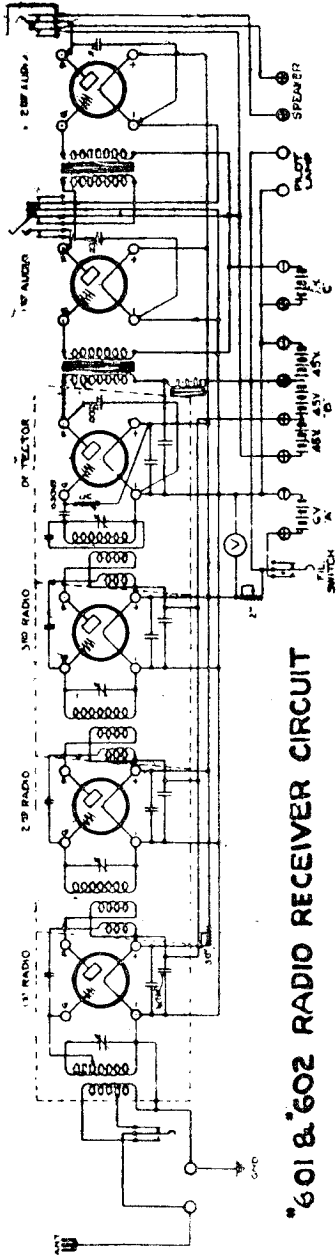
Model 403, 403-A



Model 403-B

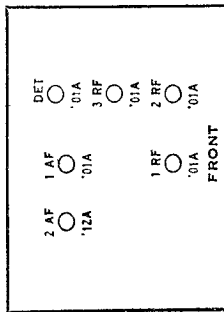
MODEL 601, 602
MODEL 633, 634

STROMBERG - CARLSON TEL. MFG. CO.

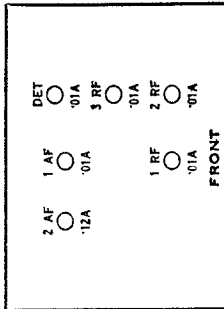


*601 & 602 RADIO RECEIVER CIRCUIT

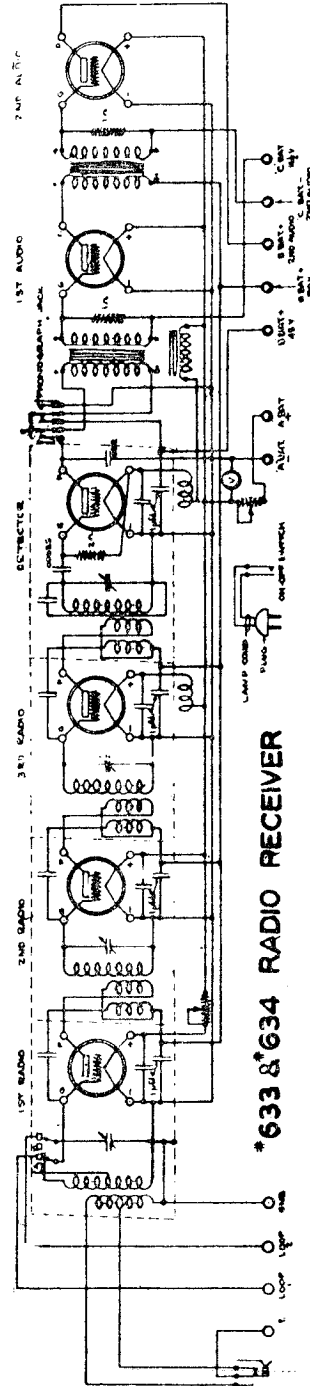
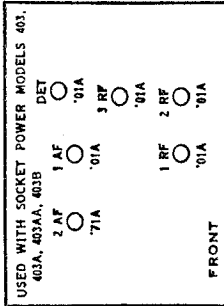
Models 601, 601A, 601B (1925-26)



Models 602A, 602B (1925-26)



Models 633, 634 (1927)



*633 & 634 RADIO RECEIVER

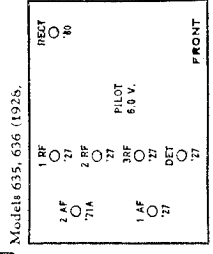
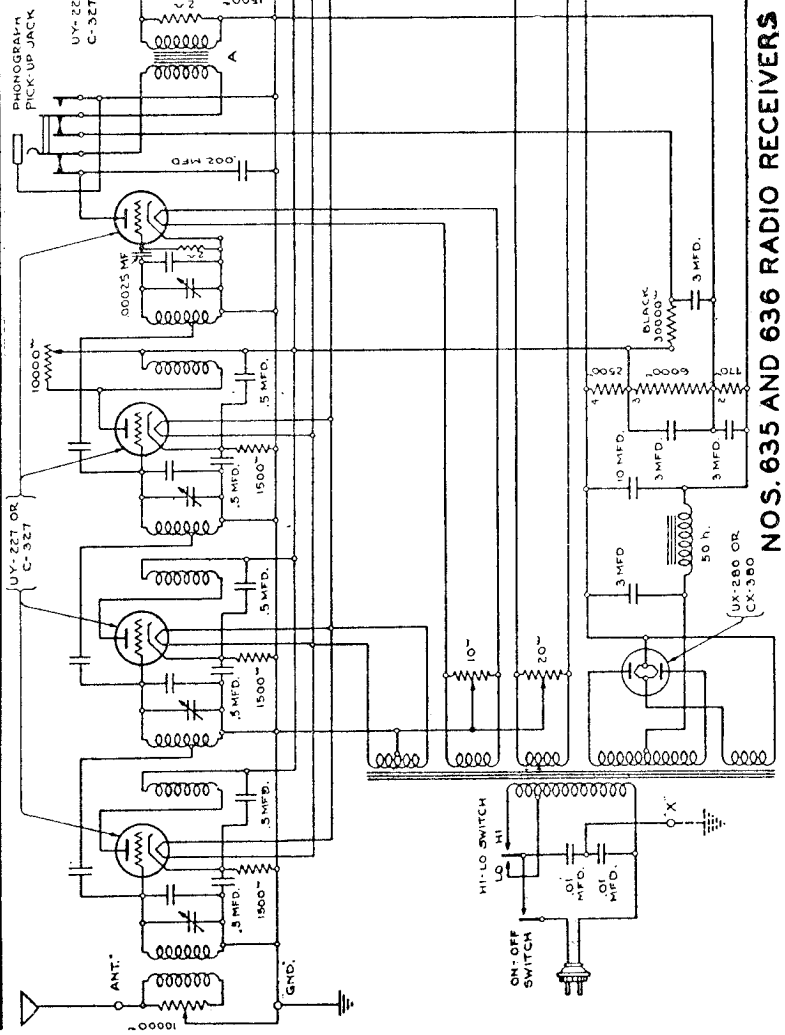
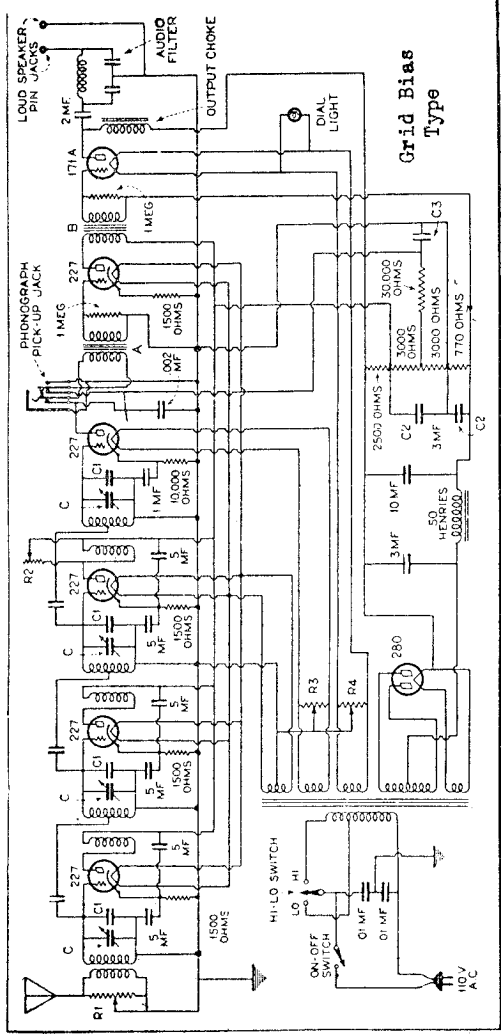
MODEL 635, 636 AC
Two Types

STROMBERG - CARLSON TEL. MFG. CO.

The difference between the two types is to be found in the detector circuit. In one of the types, type 1, the detector tube secures its bias via a cathode resistor. In the other type, the detector circuit is equipped with a grid leak and condenser.

STROMBERG-CARLSON—Models 635-636
Line Voltage 115—High Volt Tap—Volume Control Full

TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE (LET. R.F. DET. ETC.)	TUBE DATA						READINGS, PLUG IN SOCKET OF REF.				
			VOLTS	W	W	W	W	W	W	W	W	W	
227	1st. R.F.	2-35	102	2.25	92	5.0	5.5	6.5	3.3				
227	2nd. R.F.	2-35	102	2.25	92	5.0	5.5	6.5	3.3				
227	3rd. R.F.	2-35	102	2.25	92	5.0	5.5	6.5	3.3				
227	Detector	2-35	90	2.20	32	5.0	3.0	2.1	10.1				
227	1st. A.F.	2-35	100	2.25	84	4.0	3.2	6.3	10.1				
171	2nd. A.F.	4-75	210	4.70	164	34.5	10.0	20.0	5.0				
280	Rectifier	4-90	—	4.65	—	—	—	—	—				

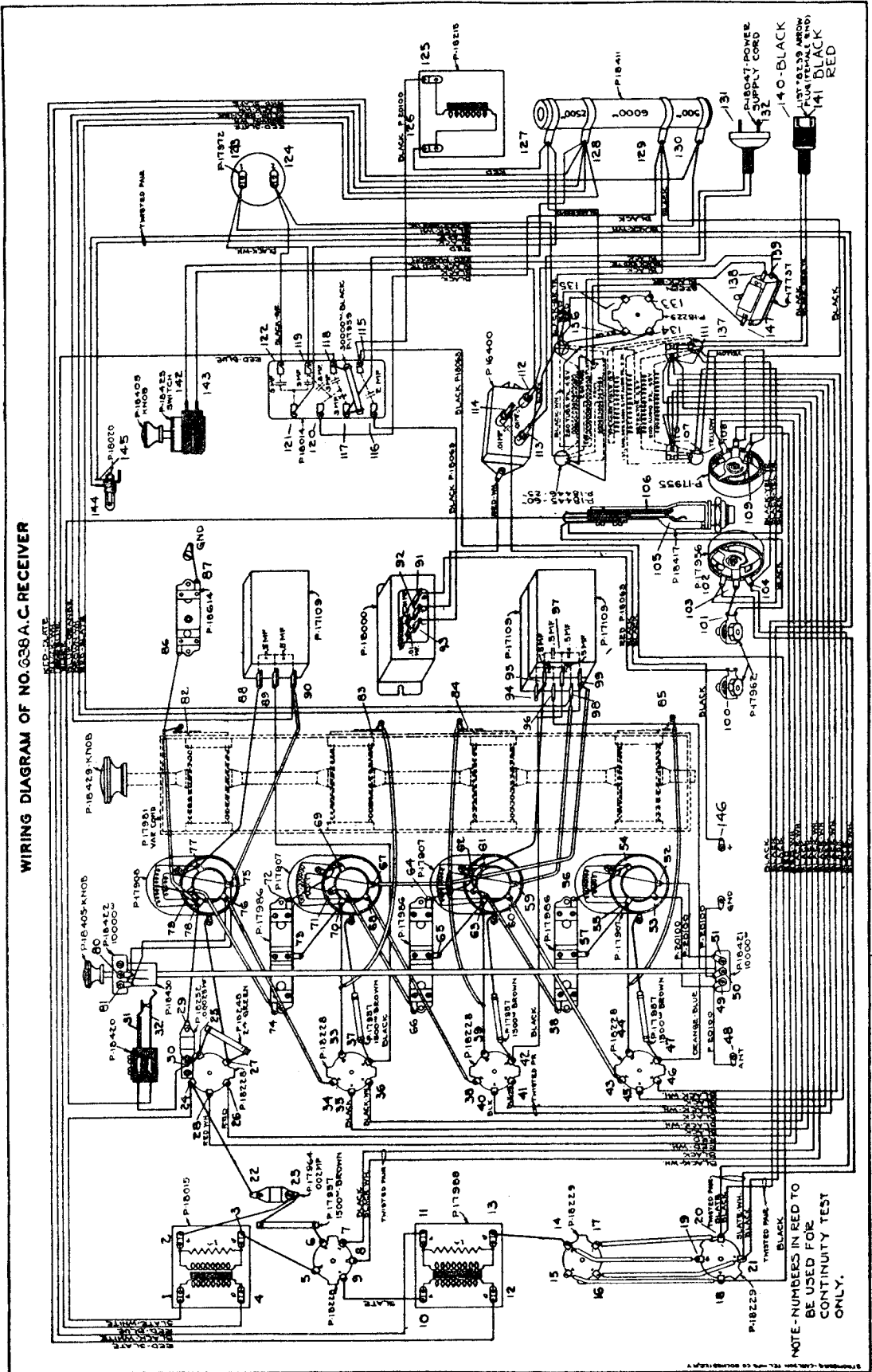


NOS. 635 AND 636 RADIO RECEIVERS

MODEL 638 AC
Chassis Wiring

STROMBERG-CARLSON TEL. MFG. CO

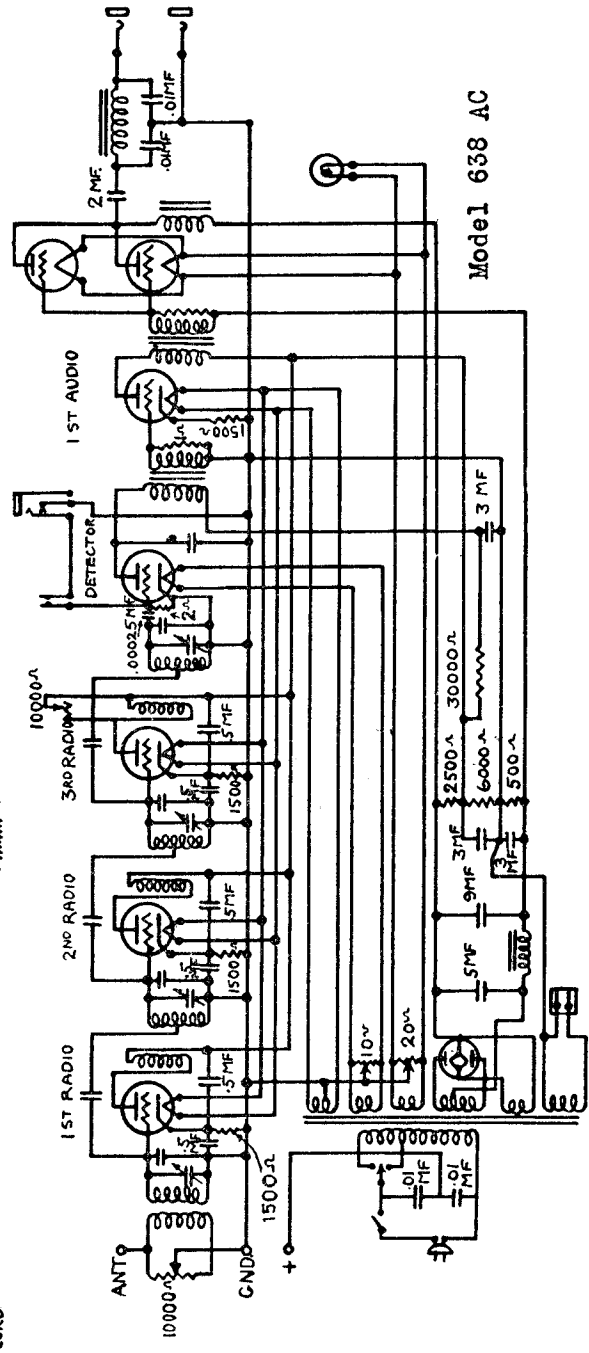
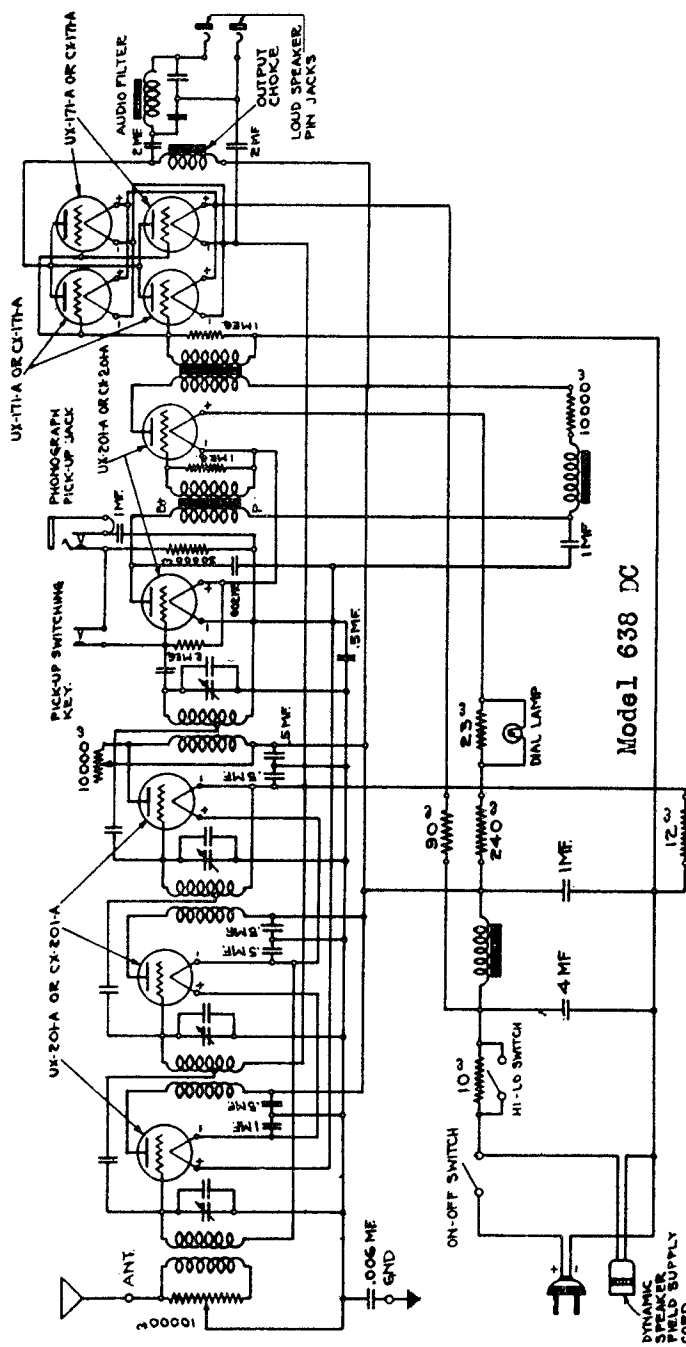
WIRING DIAGRAM OF NO. 638A C. RECEIVER



NOTE - NUMBERS IN RED TO BE USED FOR CONTINUITY TEST ONLY.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 638 AC
MODEL 638 DC



Model 638 DC

Model 638 AC

Models. 638 DC (1928),

1 RF	2 AF	RECT
'01A	'71A	'80
2 RF		
'01A	'71A	
3 RF		
'01A		
1 AF	PILOT	
'01A	6.0 V.	
		FRONT

Model 638 AC (1929)

2 AF	1 RF	RECT
'71A	'27	'80
	2 RF	
'71A	'27	
	3 RF	
	'27	
1 AF	DET	PILOT
'27	'27	6.0 V.
		FRONT

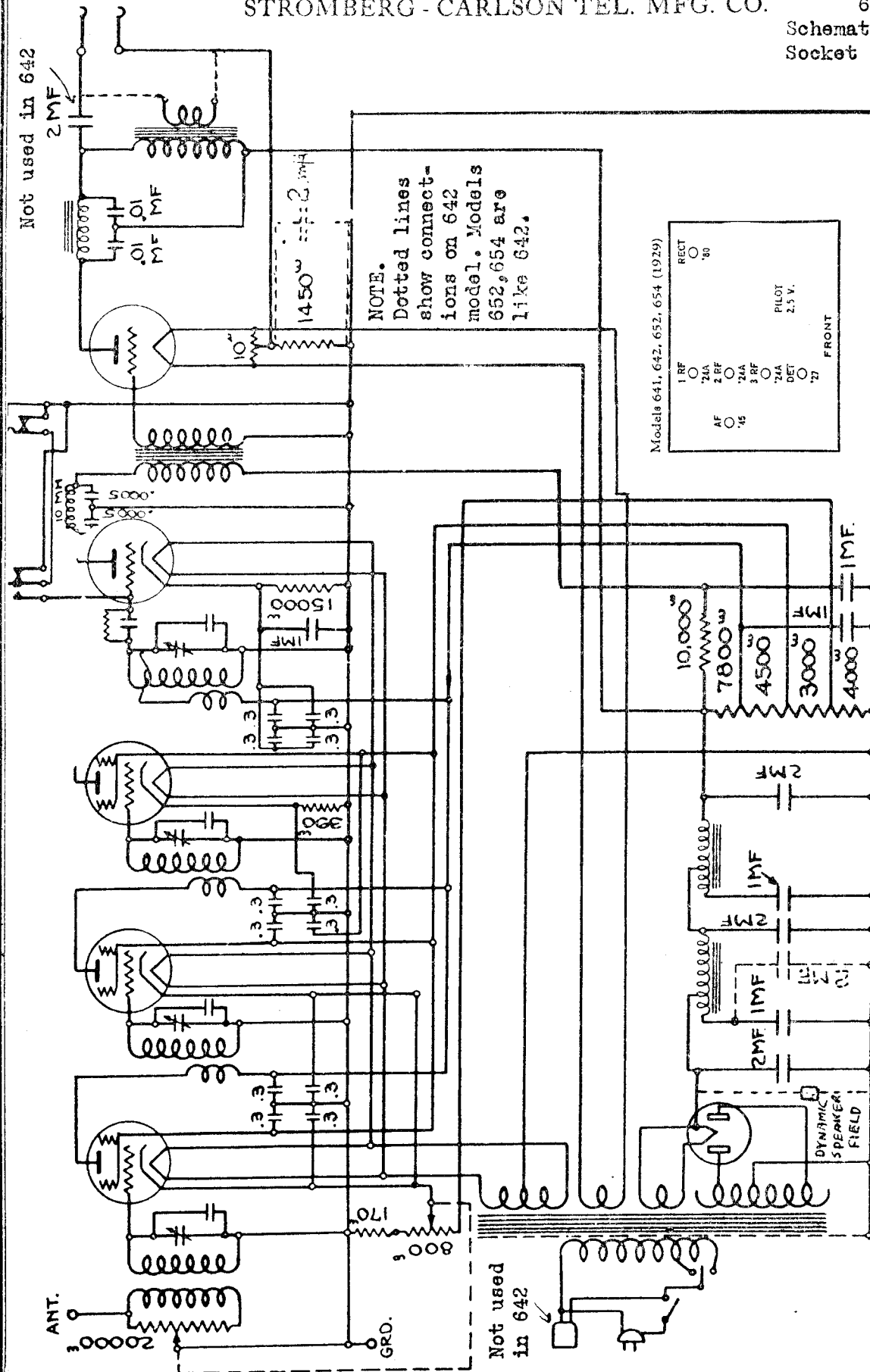
Model 638 Line 117 V. Vol. Maximum

Tube Type	Stage	Fil Volts	Plate Volts	Grid Volts	Plate Ma.
'27	1 RF	2.1	90	4.	2.5
'27	2 RF	2.1	90	4.	2.8
'27	3 RF	2.1	90	4.	3.5
'27	Det.	2.	35	-	2.
'27	1 AF	2.	80	4.	3.5
'71A	2 AF	4.4	155	30.	22.
'71A	2 AF	4.4	155	30.	22.
'80	Rec.	4.4	---	-	37.*

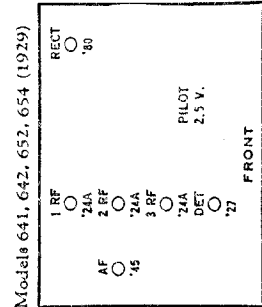
* Per Anode

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 641, 642,
652, 654
Schematic, Voltage
Socket



NOTE.
Dotted lines
show connect-
ions on 642
model. Models
652, 654 are
like 642.



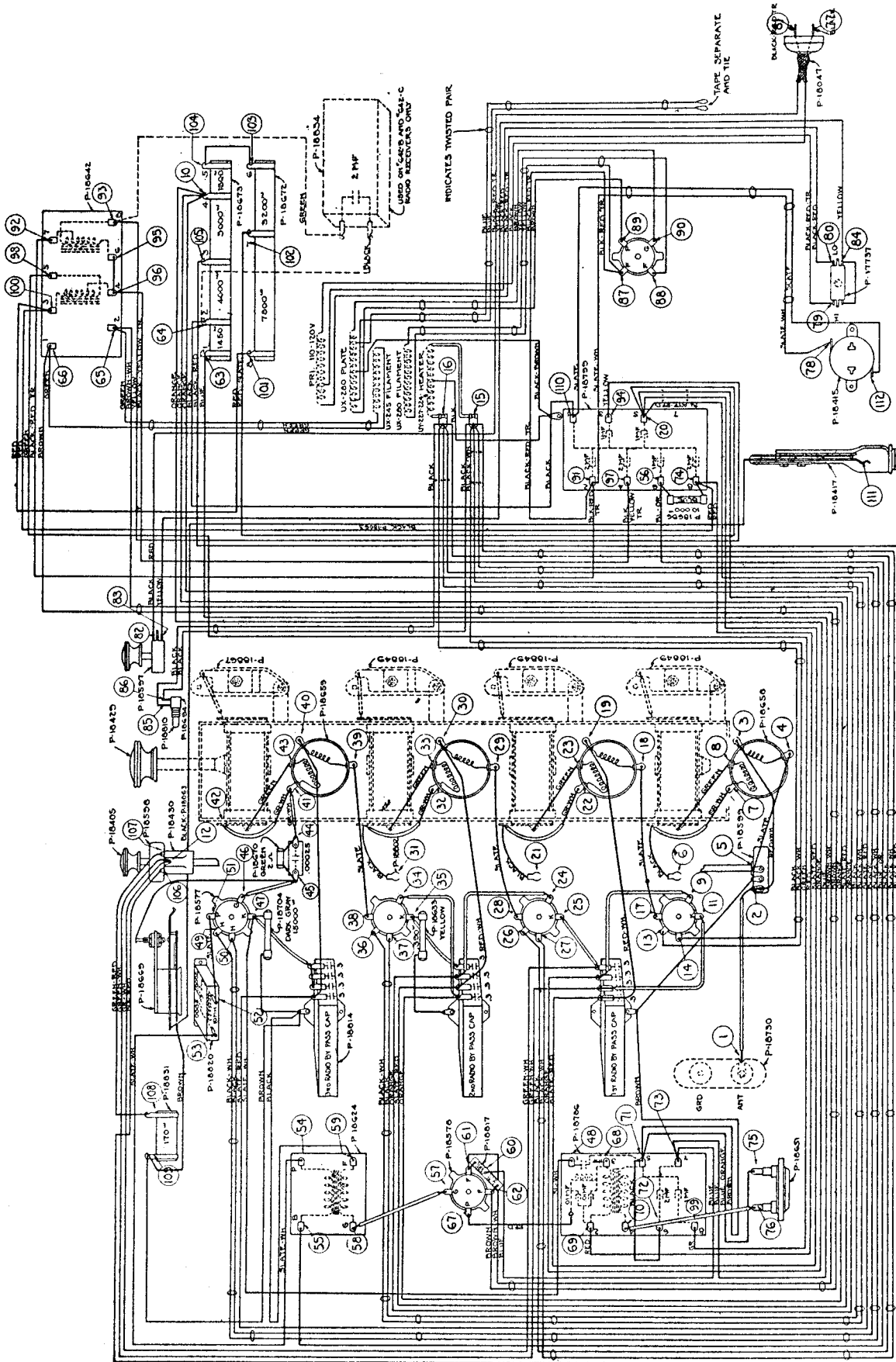
Receiver Code No.	Line Voltage 114— -Set on High Volt Tap Control Position Max	Voltage	Frequencies
641-A		105-125	60 Cycles
641-B		105-125	25-60 Cycles
641-C		210-250	25-60 Cycles

TUBE NO. OR COND.	POSITION OF TUBE IN TESTER	TUBE IN TESTER		TUBE IN SOCKET OF SET	
		OUTSIDE VOLTS	NORMAL VOLTS	OUTSIDE VOLTS	NORMAL VOLTS
224 1st RF	1ST	2.45	1.0	2.24	1.36
224 2nd RF	2ND	2.45	1.40	2.24	1.36
224 3rd RF	3RD	2.45	1.40	2.24	1.36
227 Det.	DET.	2.45	2.78	2.24	2.68
245 Amp.	AMP.	2.45	3.55	2.24	2.38

Not used in 642

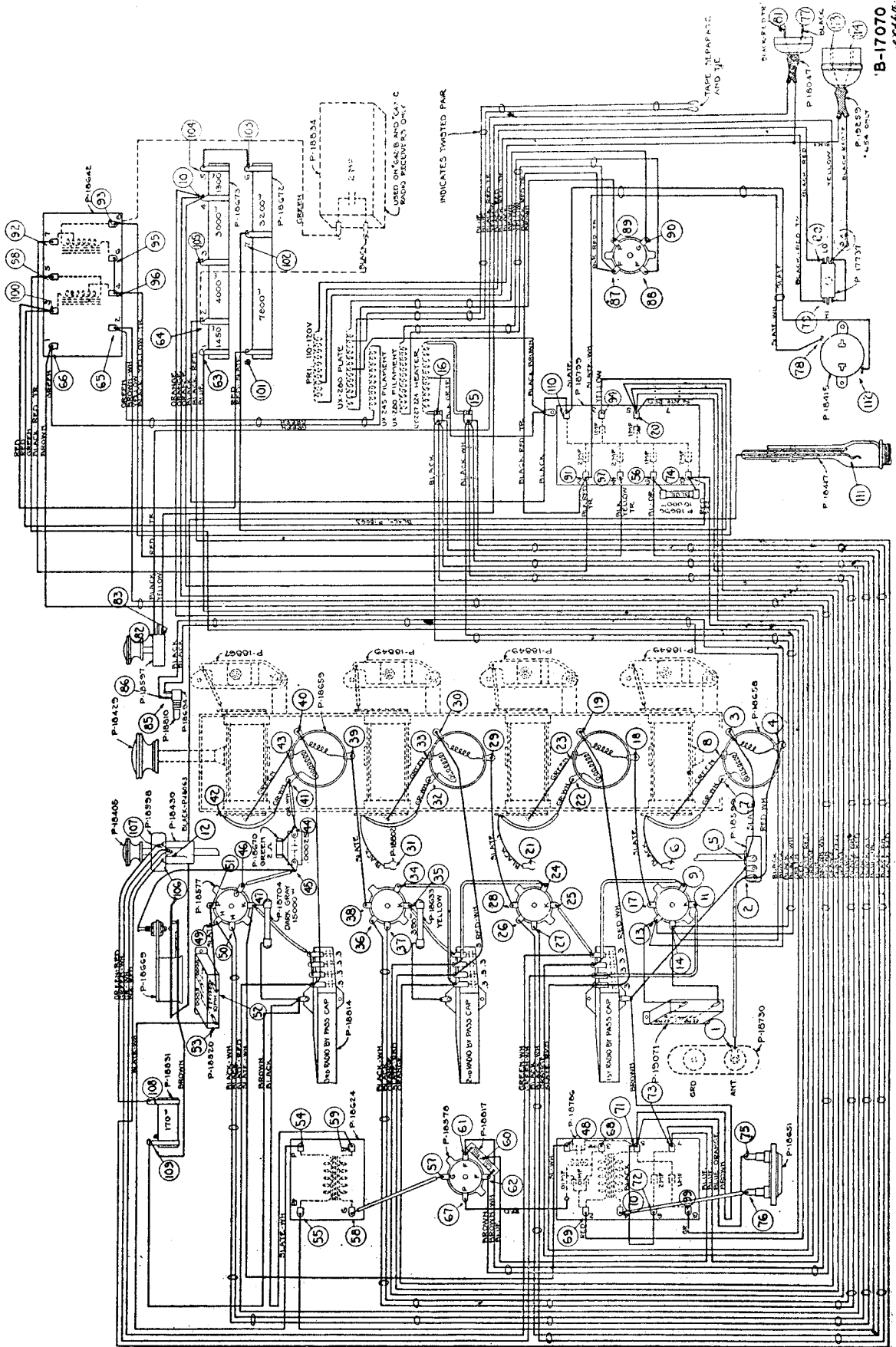
STROMBERG - CARLSON TEL. MFG. CO.

MODEL 642
Chassis Wiring



MODEL 652,654
Chassis Wiring

STROMBERG - CARLSON TEL. MFG. CO.

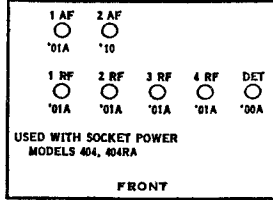


B-17070
PAGE

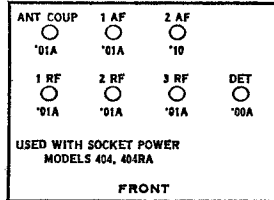
STROMBERG - CARLSON TEL. MFG. CO.

MODEL 734
 MODEL 744
 MODEL 404 RA

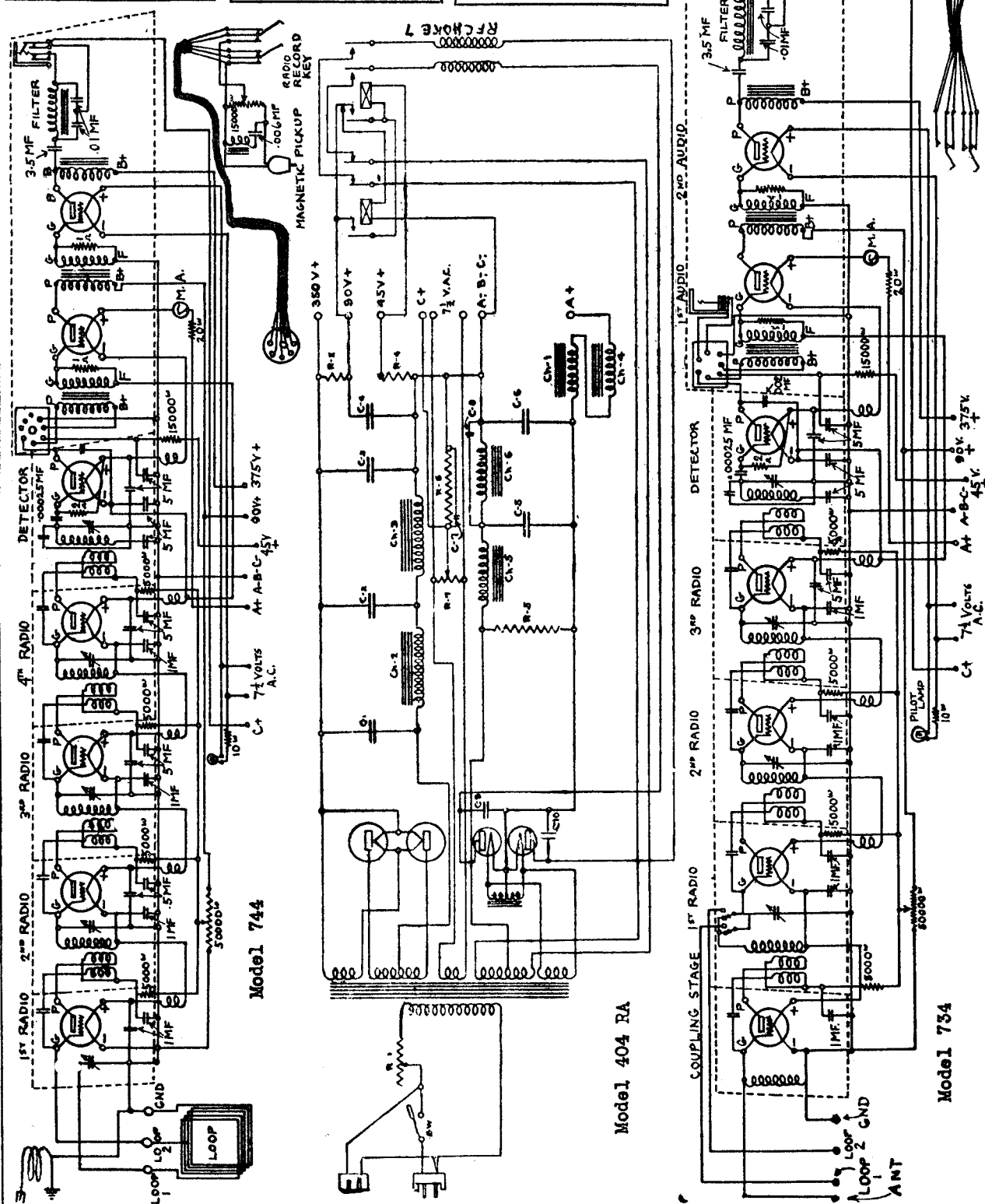
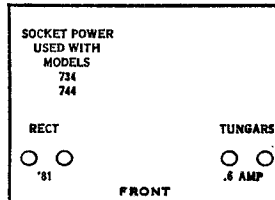
Model 744 (1927)



Model 734 (1927)

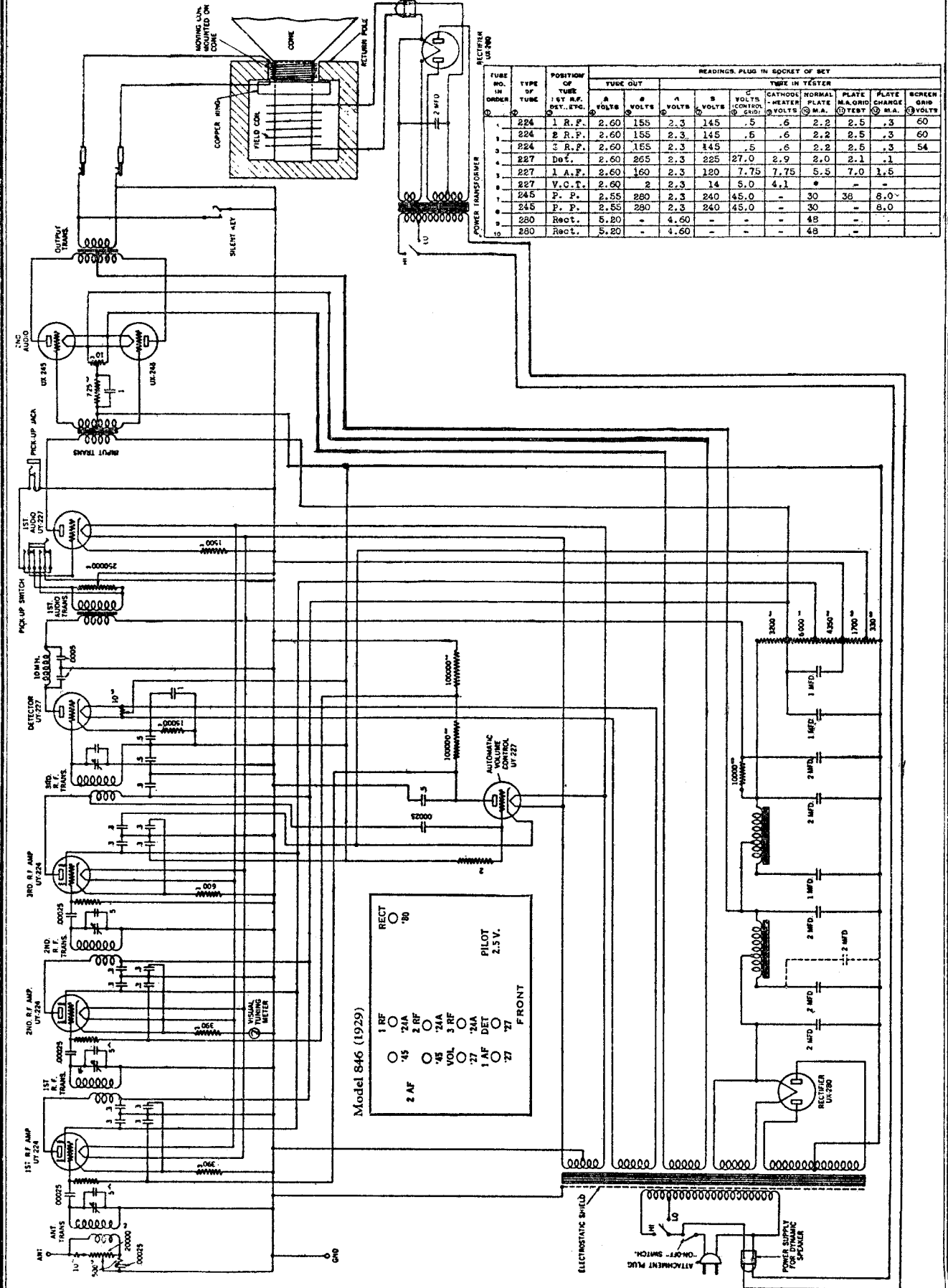


Model 404RA (1927)

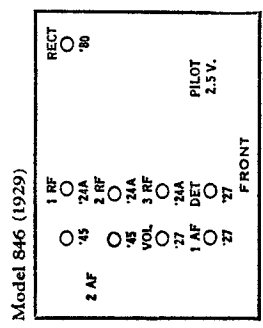


MODEL 846 AC
Schematic

STROMBERG - CARLSON TEL. MFG. CO.

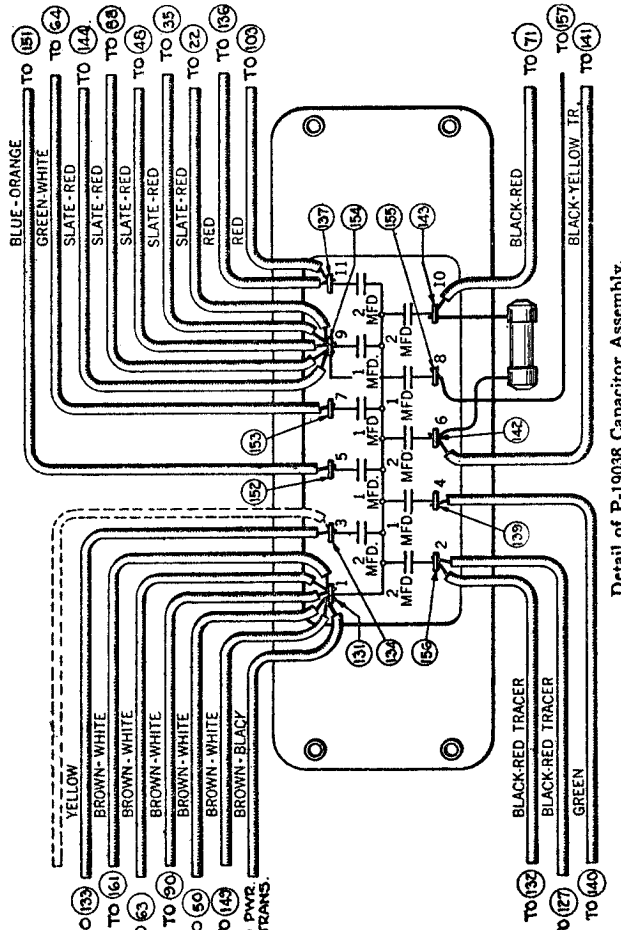


TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1 ST. REF. DET. ETC.	TUBE OUT				TUBE IN TESTER					
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	2 VOLTS CONTROL GRID	CATHODE HEATER VOLTS	NORMAL PLATE M.A.	PLATE M.A. @ TEST	PLATE CHARGE M.A.	SCREEN GRID VOLTS
1	224	1 R.P.	2.60	155	2.3	145	.5	.6	2.2	2.5	.3	60
2	224	2 R.P.	2.60	155	2.3	145	.5	.6	2.2	2.5	.3	60
3	224	3 R.P.	2.60	155	2.3	145	.5	.6	2.2	2.5	.3	54
4	227	Det.	2.60	265	2.3	225	27.0	2.9	2.0	2.1	.1	-
5	227	1 A.F.	2.60	160	2.3	120	7.75	7.75	5.5	7.0	1.5	-
6	227	V.C.T.	2.60	2	2.3	14	5.0	4.1	*	-	-	-
7	245	P. P.	2.55	280	2.3	240	45.0	-	30	36	8.0	-
8	245	P. P.	2.55	280	2.3	240	45.0	-	30	36	8.0	-
9	280	Rect.	5.20	-	4.60	-	-	-	48	-	-	-
10	280	Rect.	5.20	-	4.60	-	-	-	48	-	-	-

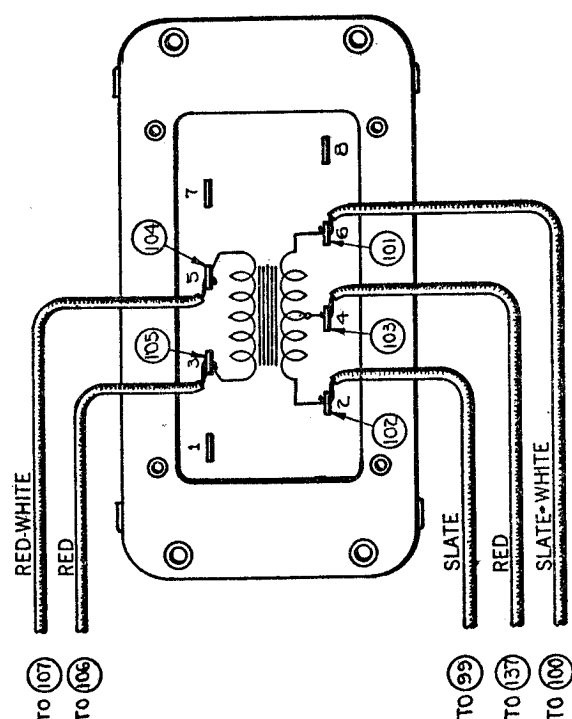


MODEL 846

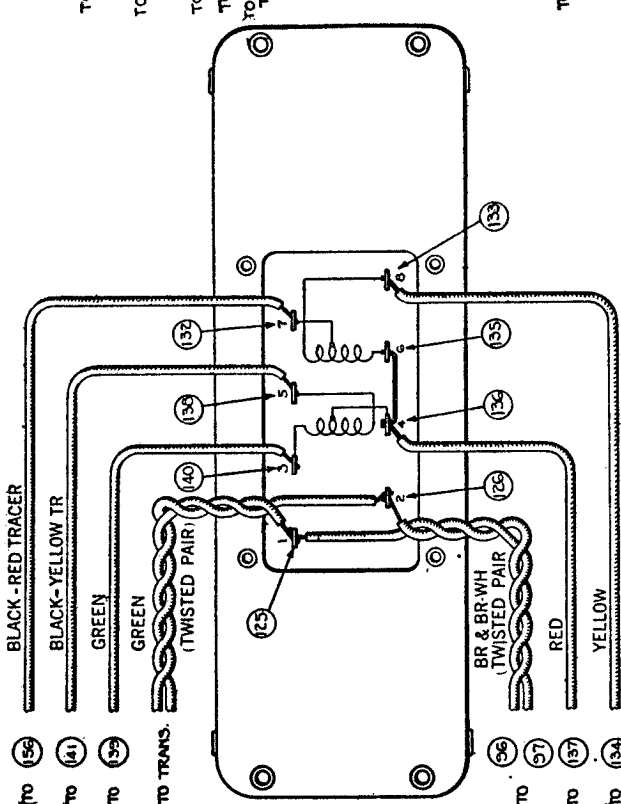
Internal Wiring STROMBERG - CARLSON TEL. MFG. CO.



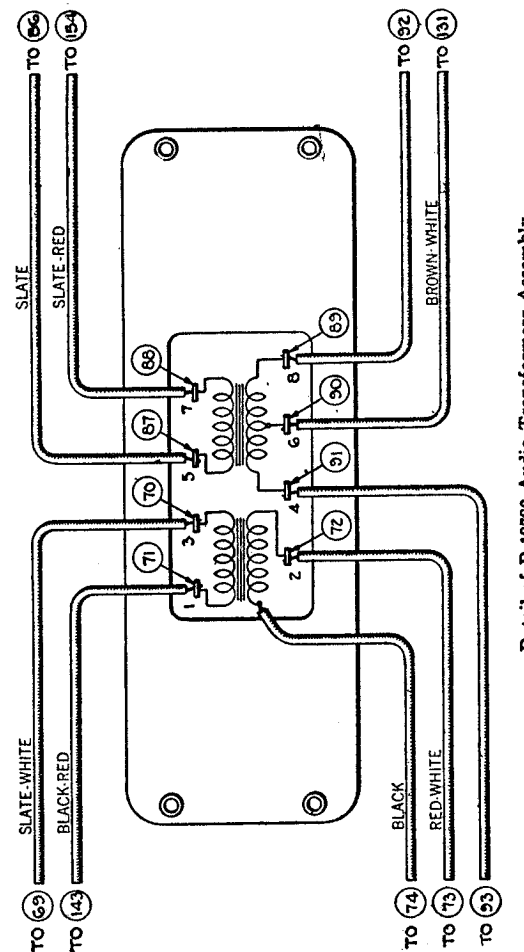
Detail of P-19038 Capacitor Assembly.



Detail of P-18781 Output Transformer.



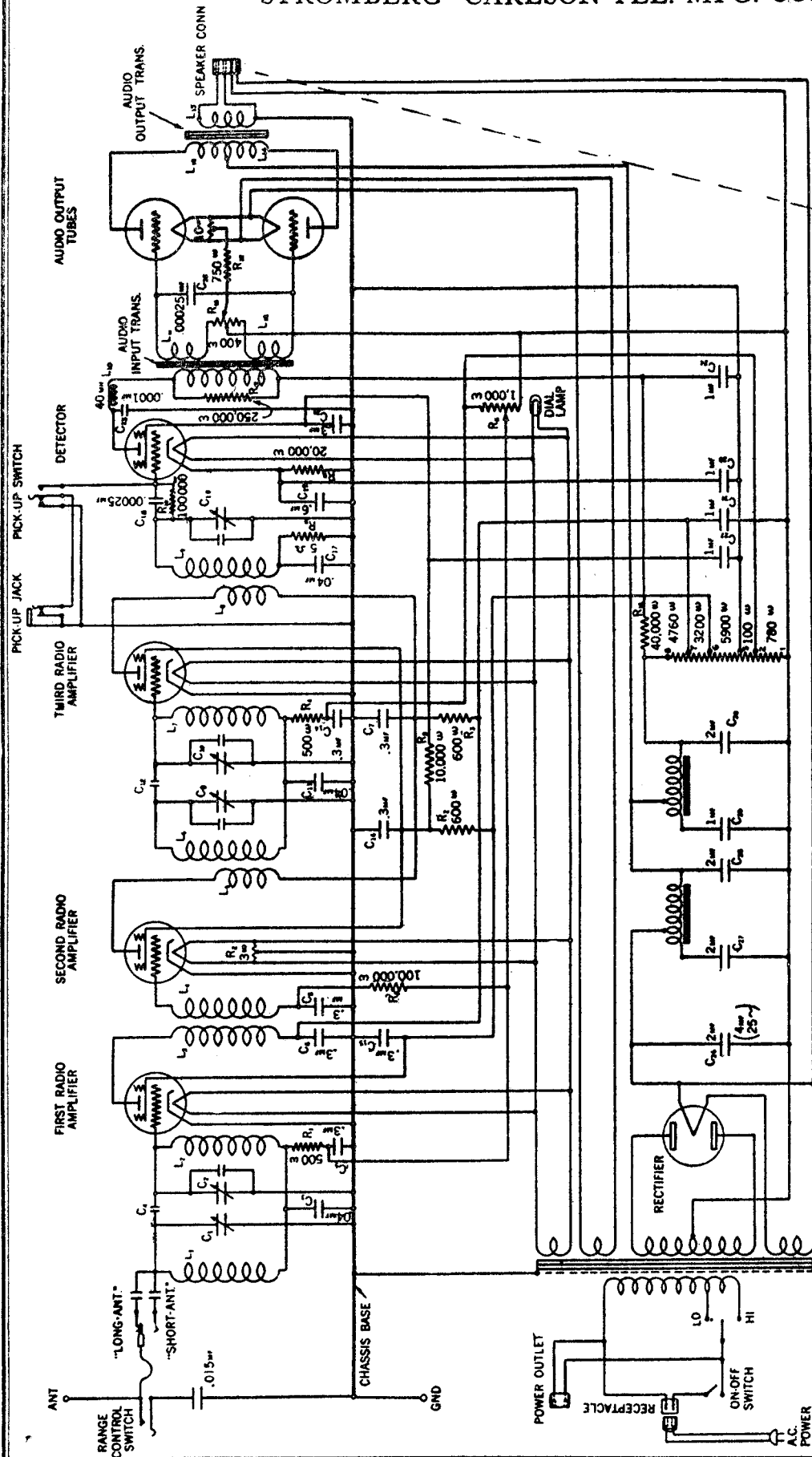
Detail of P-18200 Filter Inductor Assembly.



Detail of P-18780 Audio Transformers Assembly.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 10-11
Schematic

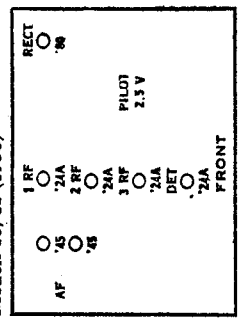


STROMBERG-CARLSON—Models 10 and 11
Line Voltage 120—Voltage Tap High

Models 10, 11 (1930)

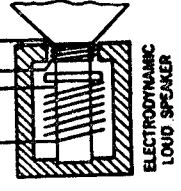
METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET

TYPE OF TUBE	TYPE OF TUBE	POWER IN WATT	OPERATING VOLTAGES		MILLIAMPERES	
			CONTROL	SCREEN	PLATE	PLATE
1	2B4	1	2.4	2.4	2.4	80
2	2B4	2	2.4	1.35	2.5	80
3	2B4	3	2.4	1.55	2.5	80
4	2B4	30-1	2.4	800	-	75
5	2A5	27-17	2.4	825	-	45
6	2A5	27-17	2.4	825	-	45
7	2B0	300	6.8	-	-	-



Models 10, 11 (1930)

Models 10, 11 (1930)



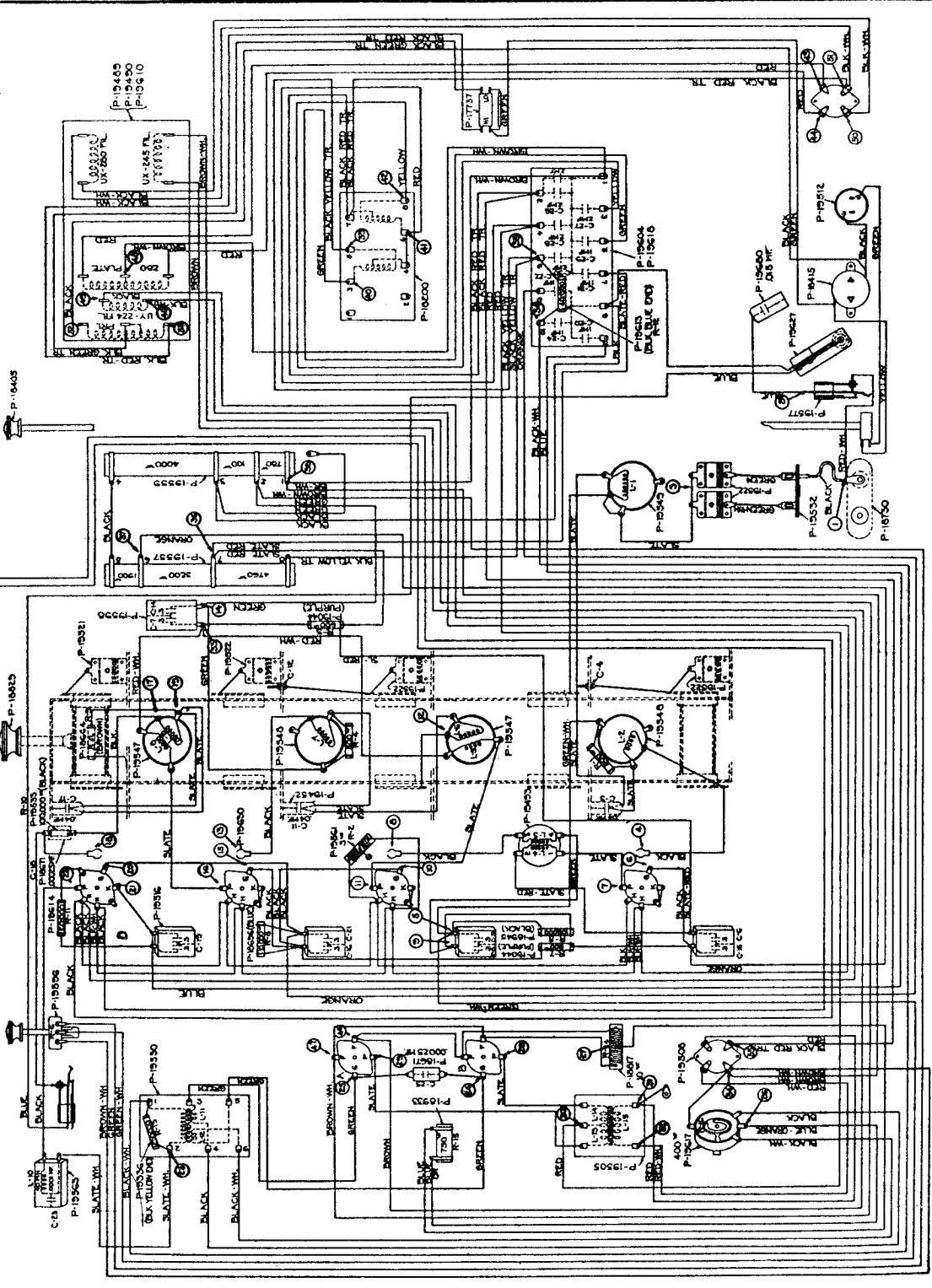
ELECTRODYNAMIC LOUD SPEAKER

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 10-11
Chassis Wiring

THE DESIGNATION NUMBERS OF THE CAPACITORS, INDUCTORS, AND RESISTORS ARE INDICATED ON THIS DIAGRAM WITH A HYPHEN BETWEEN THE LETTER AND NUMBER TO SHOW THAT THE NUMBER IS A SUBSCRIPT, THUS C-1, L-1, R-1.

RED NUMBERS IN CIRCLES ARE USED FOR CONTINUITY TESTS. ALL NUMBERS SIMILARLY ENCLOSED IN CIRCLES ON SCHEMATIC CIRCUITS AND DETAILS OF APPARATUS INDICATE CORRESPONDING TERMINALS ON THIS WIRING DIAGRAM FOR CONTINUITY TESTS.



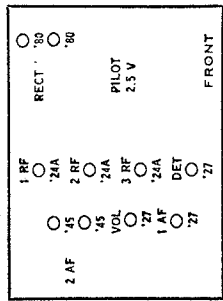
MODEL 12-14

Schematic, Pickup STROMBERG - CARLSON TEL. MFG. CO.

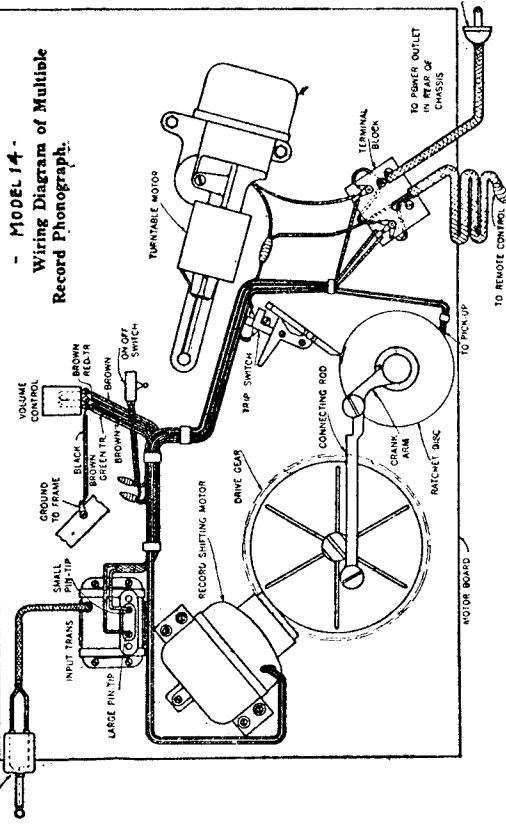
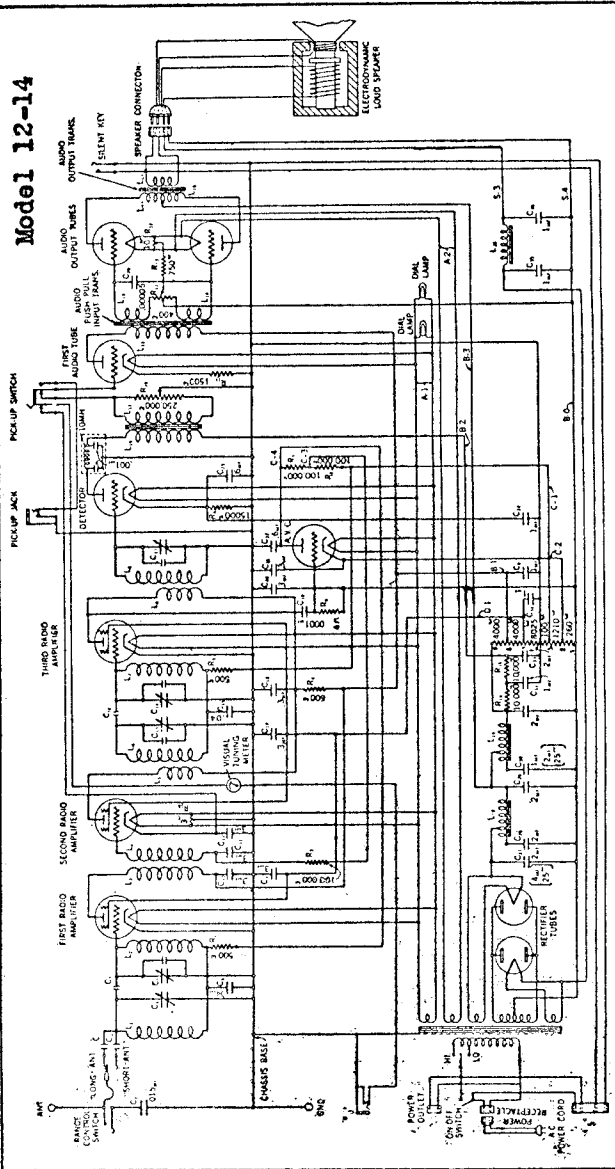
**STROMBERG-CARLSON—Models 12 and 14
Line Voltage 120—Voltage Tap High**

TYPE OF TUBE	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES		MILLIAMPERES	PLATE CONNECTION
			PLATE	GRID 1		
224	1 R.P.	2, 4	135	3.0*	85	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
224	2 R.P.	2, 4	135	3.0*	85	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
224	3 R.P.	2, 4	135	3.0*	85	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
227	1 A.P.	2, 4	195	-	85	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
245	1 A.P.	2, 4	115	-	4.5	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
245	2 A.P.	2, 4	115	-	4.5	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
280	Rect.	4, 8	-	-	-	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
280	Rect.	4, 8	-	-	-	TO 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Models 12, 14 (1930)



Model 12-14



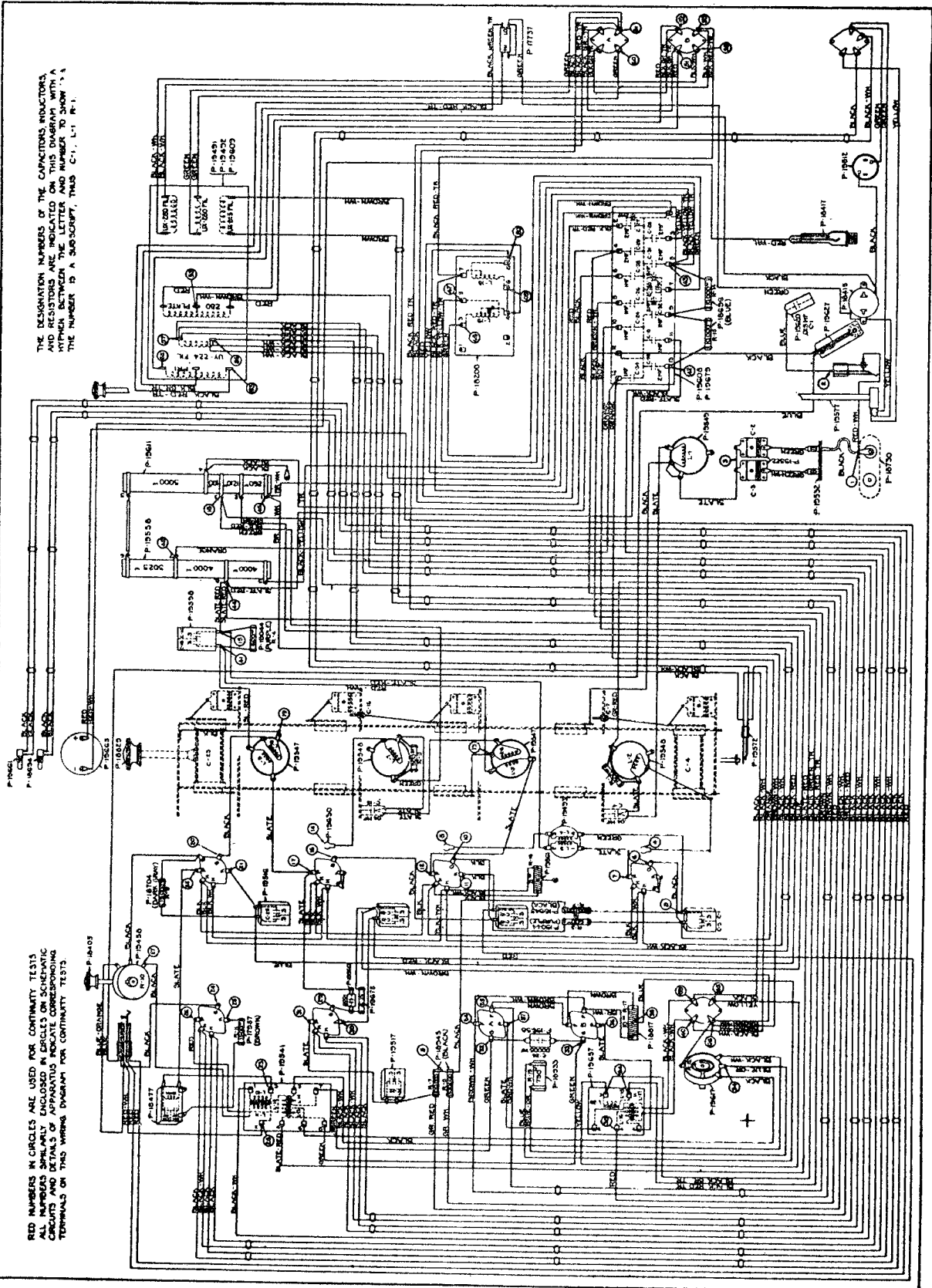
Schematic Circuit of Multiple Record Phonograph.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 12-14
Chassis Wiring

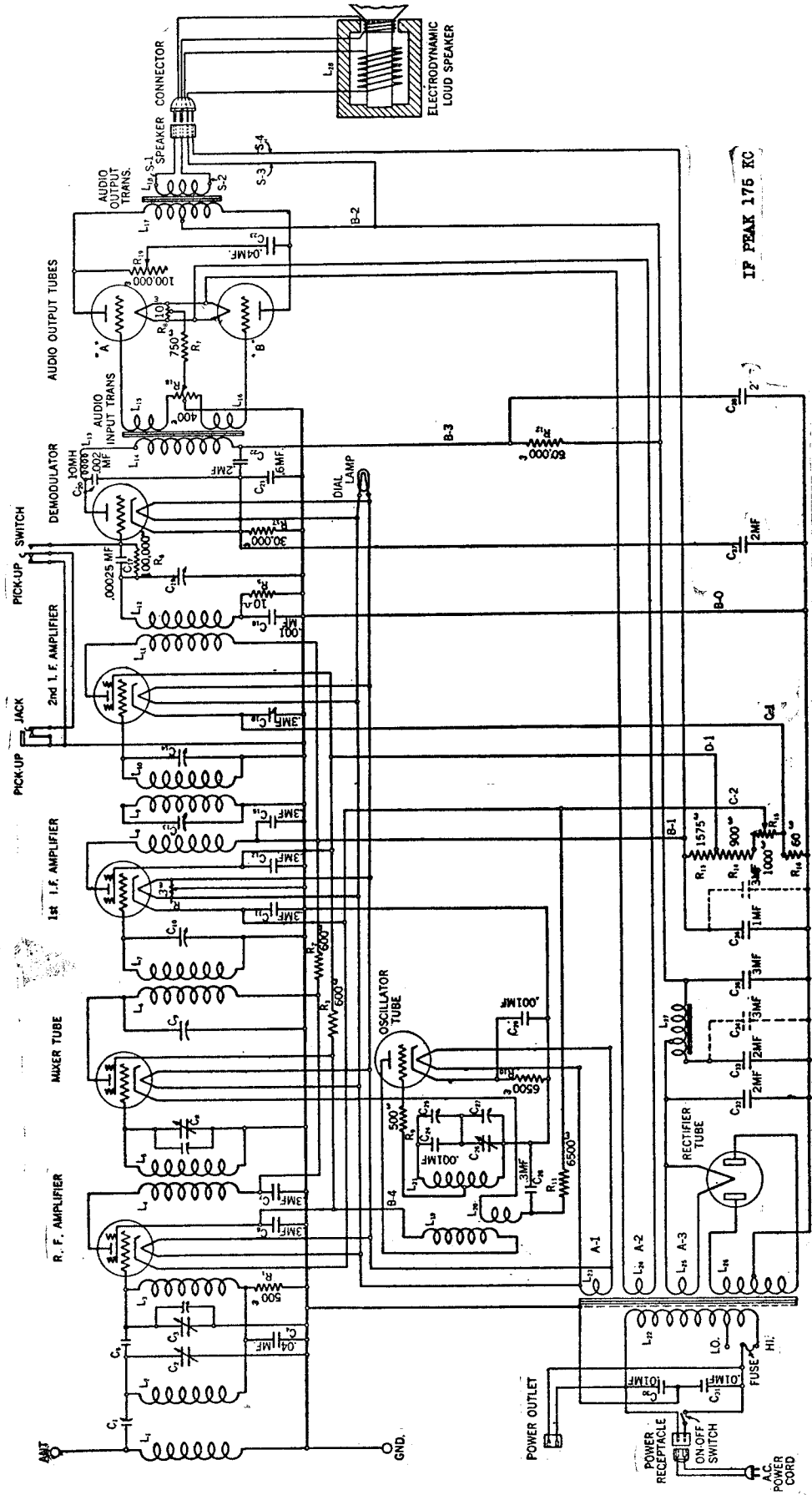
THE DESIGNATION NUMBERS OF THE CAPACITORS, INDUCTORS, AND RESISTORS ARE INDICATED ON THIS DIAGRAM WITH A HYPHEN BETWEEN THE LETTER AND NUMBER TO SHOW THE NUMBER IS A SUBSCRIPT, THUS C-1, L-1, R-1.

RED NUMBERS IN CIRCLES ARE USED FOR CONTINUITY TESTS AND ARE NOT PART OF THE ELECTRICAL CIRCUIT. THESE RED NUMBERS ARE USED TO IDENTIFY THE TERMINALS ON THIS WIRING DIAGRAM FOR CONTINUITY TESTS.



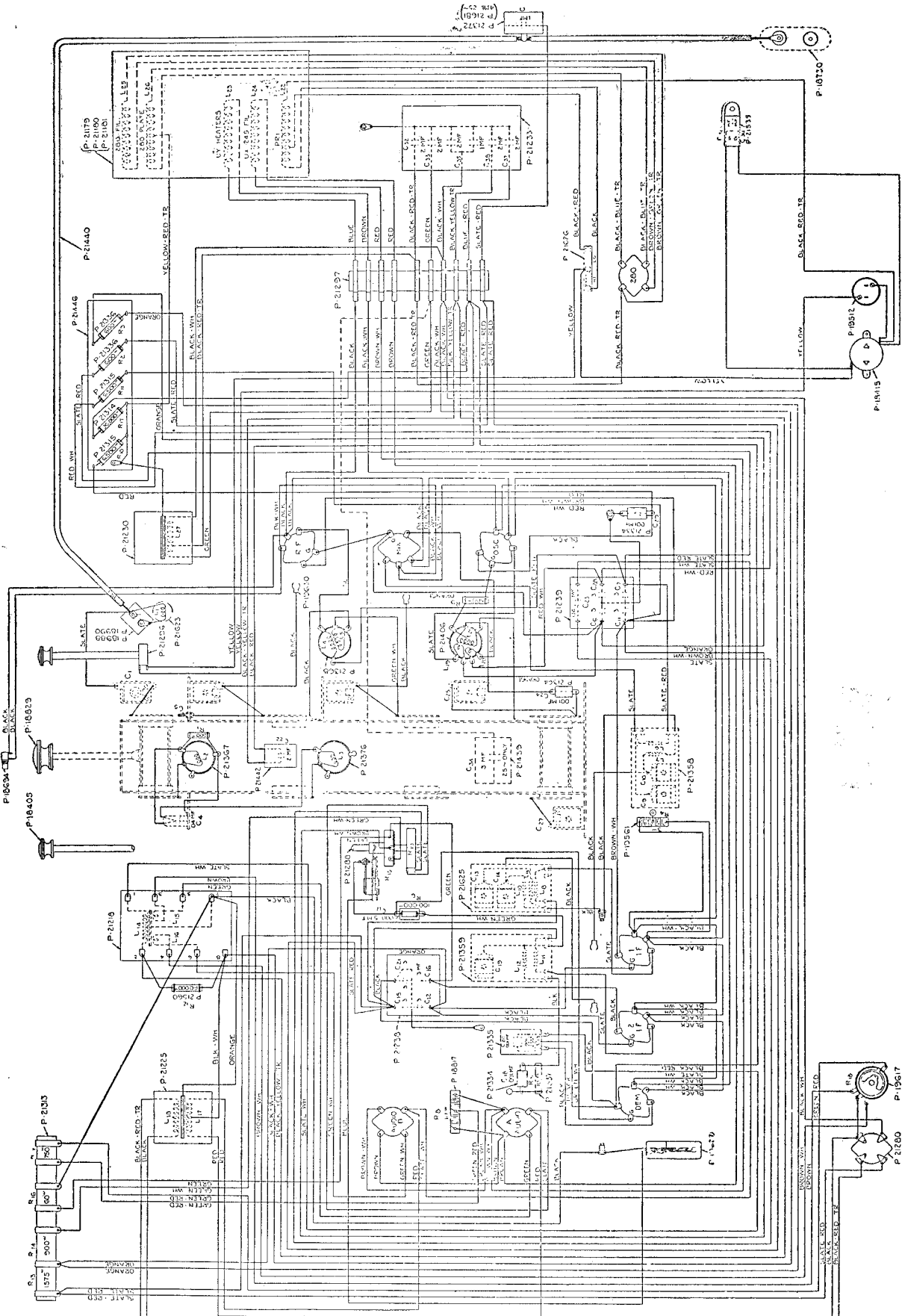
MODEL 19,20 AC
Schematic

STROMBERG CARLSON TEL. MFG. CO.



STROMBERG - CARLSON TEL. MFG. CO.

MODEL 19, 20 AC
Chassis Wiring



MODEL 19,20 AC

Voltage
Electrical Values

STROMBERG - CARLSON TEL. MFG CO.

INDUCTANCES

No.	Value
L1	.9 millihenry
L2	215. microhenry
L3	215. microhenry
L4	5.5 millihenry
L5	215. microhenry
L6	5.5 millihenry
L7	5.5 millihenry
L8	5.5 millihenry
L9	5.5 millihenry
L10	5.5 millihenry
L11	5.5 millihenry
L12	5.5 millihenry
L19	15. microhenry
L20	5.5 microhenry
L21	172. microhenry

RESISTANCES

No.	Value	Body	Tip	Dot
R1	500	Green	Blk	Brn
R2	600	Blue	Blk	Brn
R3	600	Blue	Blk	Brn
R4	3	(Wire wound)		
R5	10 megs	Brn	Blk	Blue
R6	100,000	Brn	Blk	Green
R7	750	(Wire wound)		
R8	10	(Wire wound)		
R9	500	Green	Blk	Brn
R10	6,500	Blue	Green	Red
R11	6,500	Blue	Green	Red
R12	60,000	Blue	Blk	Orange
R13	1,575	(Wire wound)		
R14	900	(Wire wound)		
R15	1,000	(Wire wound)		
R16	60	(Wire wound)		
R17	30,000	Orange	Blk	Orange
R18	400	(Wire wound)		
R19	100,000	Carbon potentiometer		

CONDENSERS

C2	.0004 mfd	max.
C3	.0004 mfd	max.
C4	.04 mfd	
C5	.000001 mfd	app.
C6	.3 mfd	
C7	.3 mfd	
C8	.0004 mfd	max.
C11	.3 mfd	
C12	.3 mfd	
C15	.3 mfd	
C16	.3 mfd	
C17	.00025 mfd	
C18	.001 mfd	
C20	.002 mfd	
C21	.6 mfd	
C22	.2 mfd	
C23	.04 mfd	
C24	.001 mfd	
C26	.0004 mfd	max.
C28	.3 mfd	
C29	.001 mfd	
C30	.01 mfd	
C31	.01 mfd	
C32	2. mfd	
C33	2. mfd	
C34	3. mfd	
C35	3. mfd	
C36	1. mfd	
C36	4. mfd	(25 cy.)
C37	1. mfd	
C38	1. mfd	

TABLE 4
Normal Voltage Readings

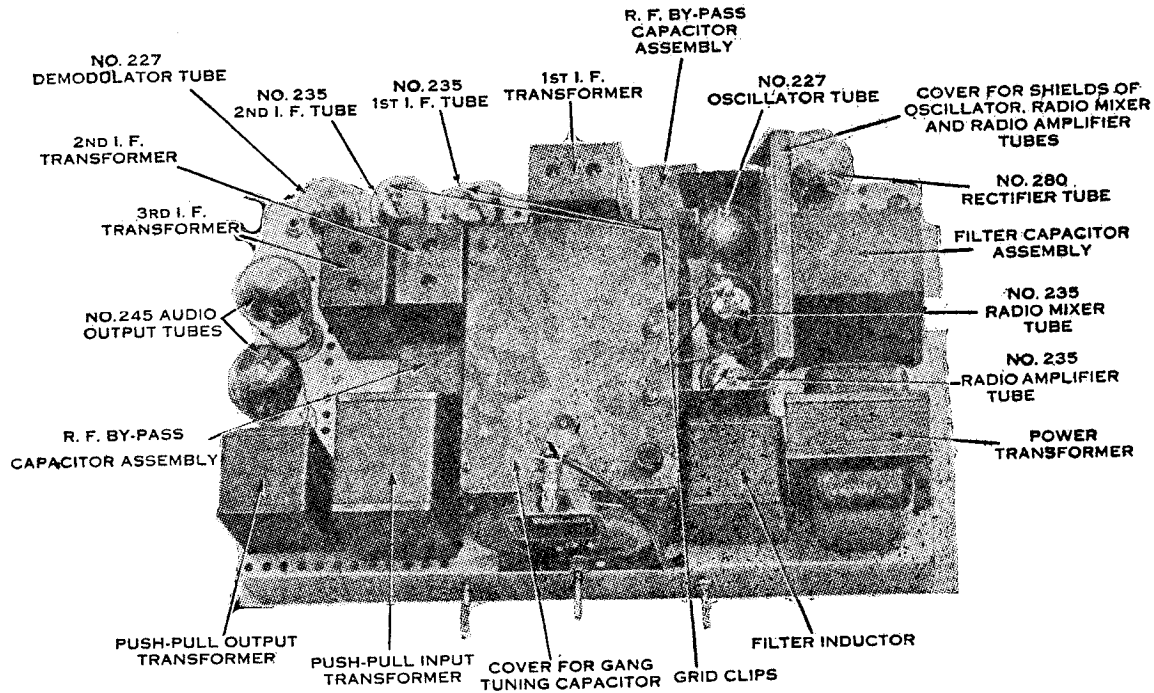
Be sure to make these readings with the Meter and Scale indicated, otherwise the results will not agree with those tabulated. Alternating voltages are indicated by italics.

Voltage	Meter	Scale	Where Measured	Approx. Value in Volts
Heater Voltage Nos. 227 & 228 Tubes	A.C.	0-4	Across Heater Terminals of Sockets	2.4
Filament Voltage No. 245 Tubes	A.C.	0-4	Across Filament Terminals of Audio Output Sockets	2.4
Filament Voltage No. 280 Tube	A.C.	0-8	Across Filament Terminals of Rectifier Socket	4.2
Plate Voltage Radio Amplifiers	D.C.	0-250	Between Plate Terminal of R. F. Amplifier Socket (+) and Chassis Base (-)	150-170
Plate Voltage Mixer Tube	D.C.	0-250	Between Plate Terminal Mixer Tube Socket (+) and Chassis Base (-)	150-170
Plate Voltage Oscillator	D.C.	0-250	Between Plate Terminal of Oscillator Socket (+) and Chassis Base (-)	85-90
Plate Voltage I.F. Tubes	D.C.	0-250	Between Plate Terminals of I. F. Amplifier Sockets (+) and Chassis Base (-)	150-170
Plate Voltage Demodulator	D.C.	0-250	Between Plate Terminal of Demodulator Socket (+) and Chassis Base (-)	190-215
Plate Voltage Audio Output Tubes	D.C.	0-250	Between Plate Terminals Audio Output Socket (+) and 10 ohm Mid Tap Resistor R ₄ (-)	250
Control Grid Voltage R.F. Amplifier	D.C.	0-10	Between Control Grid Clip of R. F. Amplifier Tube (-) and Cathode (+) of R. F. Amplifier Tube	3
Control Grid Voltage Mixer Tube	D.C.	0-250	Between Control Grid Clip Mixer Tube (-) and Cathode (+) of Mixer Tube	10-12
Control Grid Voltage 1st I.F. Amplifier	D.C.	0-10	Between Control Grid Clip 1st I. F. Tube (-) to Cathode (+) of 1st I. F. Tube	3
Control Grid Voltage 2nd I.F. Tube	D.C.	0-10	Between Control Grid Clip 2nd I. F. Tube (-) to Cathode (+) of 2nd I. F. Tube	3
Grid Voltage Oscillator	D.C.	0-250	Across 6500 ohm Resistor R ₁₀	10-15
Grid Voltage Demodulator	D.C.	0-250	Across 30,000 ohm Resistor R ₁₇	20-25
Grid Voltage Audio Tubes	D.C.	0-250	Between Grids of Audio Tubes (-) to Mid Tap 10 ohm Resistor R ₄ (+)	45-50*
Screen Voltage Radio Amplifier Mixer 1st & 2nd I.F. Tubes	D.C.	0-250	Between Screen Terminals of Tubes (+) to Chassis Base (-)	80-90*
B Voltage R.F. Amplifier and Mixer Tube	D.C.	0-250	Between Tube Side of 600 ohm Resistor R ₇ and Chassis Base	150-170*
B Voltage 1st & 2nd I.F. and Mixer Tubes	D.C.	0-250	Between "High" Side of Voltage Divider and Chassis Base	150-170*
B Voltage Audio Tubes	D.C.	0-250	Between Mid Tap of Audio Output Transformer (+) and Chassis Base (-)	300
C Voltage Audio Output Tubes	D.C.	0-250	Across 750 ohm Biasing Resistor R ₇	50
Speaker Field Voltage	D.C.	0-250	Across Small Pins of Speaker Connector Socket	180-170
Plate Voltage A.C. Pure Anode No. 280 Rectifier	A.C.	See Remarks	Between P Terminals No. 280 Rectifier Socket and Chassis Base	325-330*

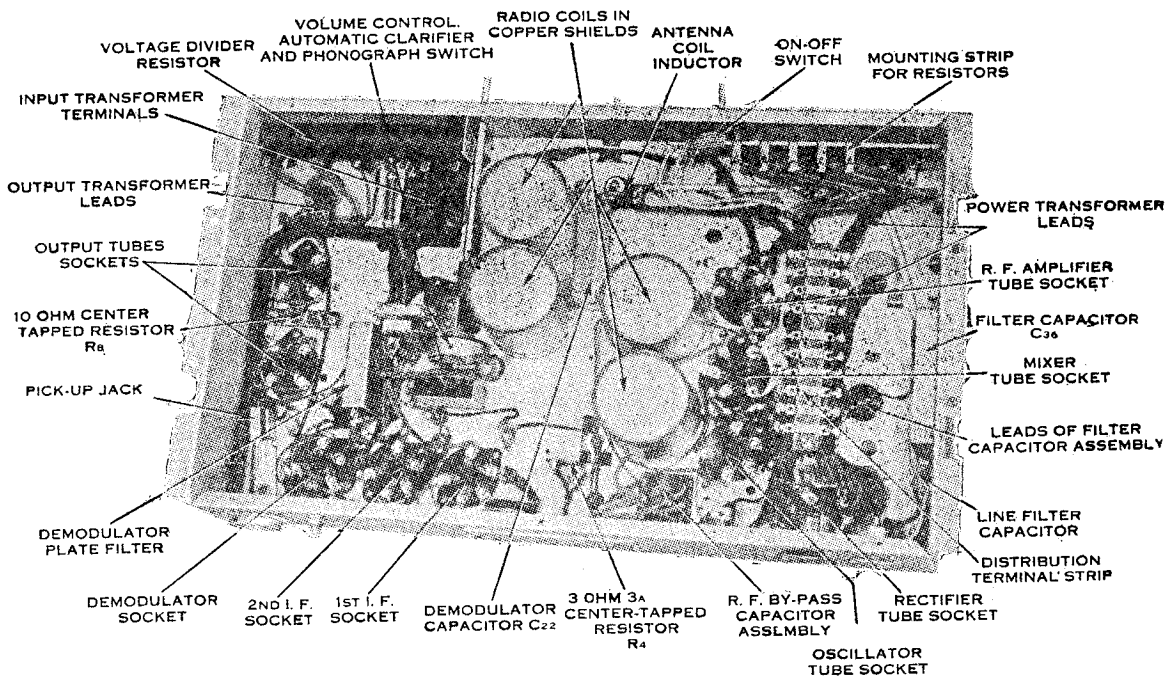
*These voltage vary with dial setting and position of volume control.
Cannot be measured on Weston Model 528 Meter unless multiplier is used.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 19,20 AC
Chassis Views.



Top View of Chassis with Tubes in Place and Shields Removed.

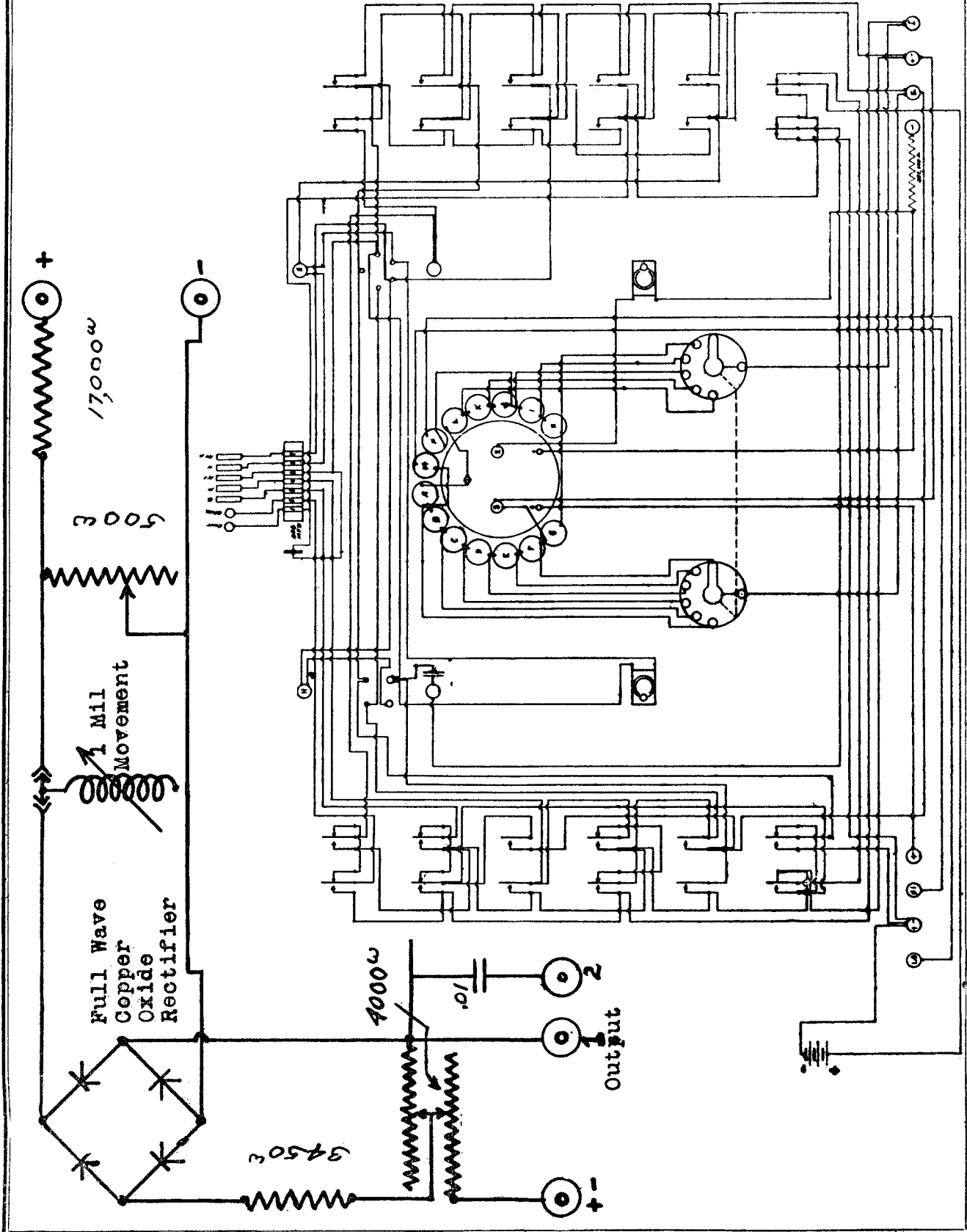


Bottom View of Chassis with Cover Removed.

The hum adjuster is next to the speaker connector receptacle which is at the rear left of the chassis looking at the chassis from the front. The fuse box is to the front of the rectifier tube socket looking at the chassis from the front. The two outlets near the rectifier tube socket are the power input and power output, the latter being nearest to the name and serial number plate. The pickup jack is to the rear of the audio output tubes.

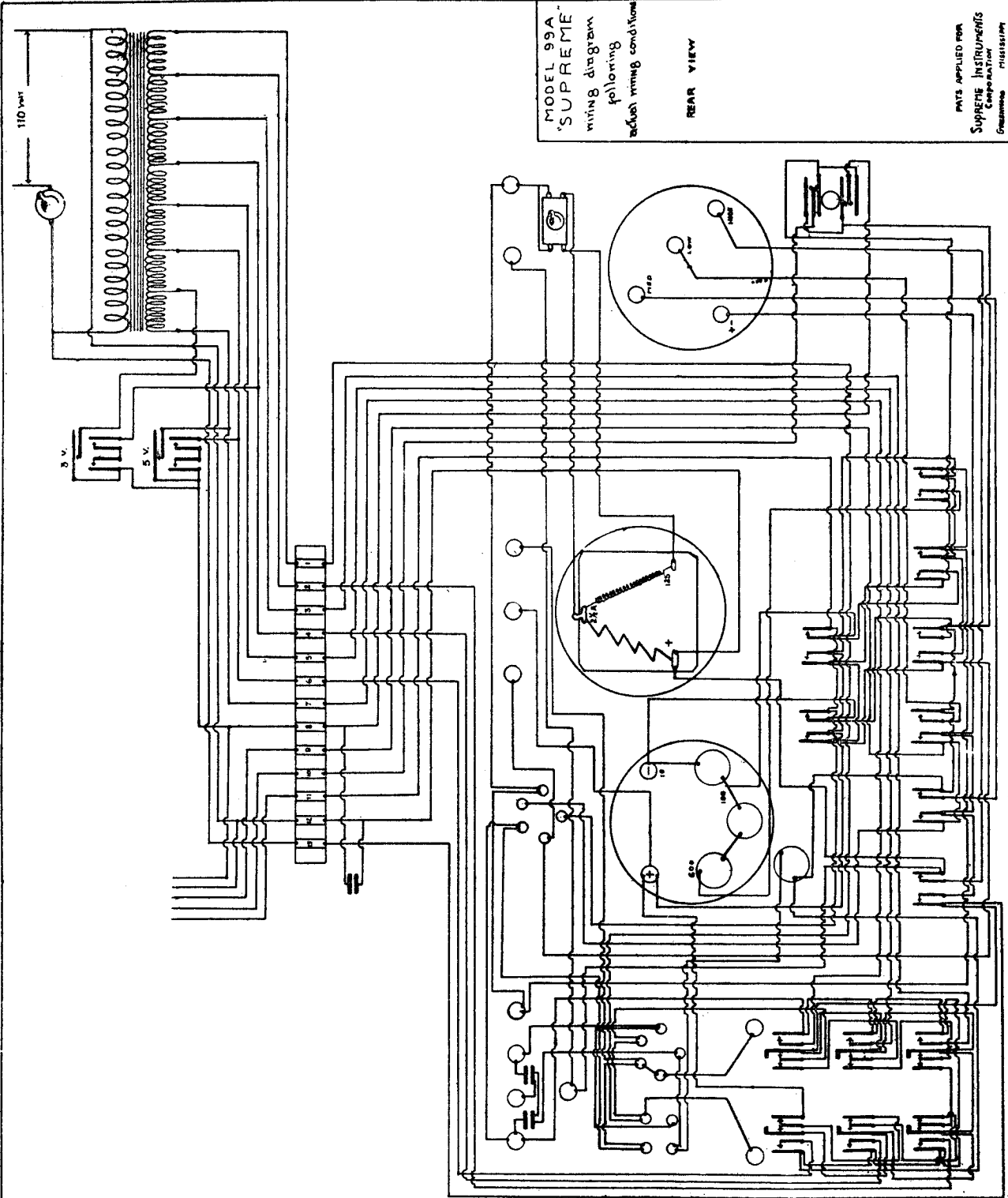
MODEL 90 Analyzer
MODEL Output Meter

SUPREME INSTRUMENTS CORP.



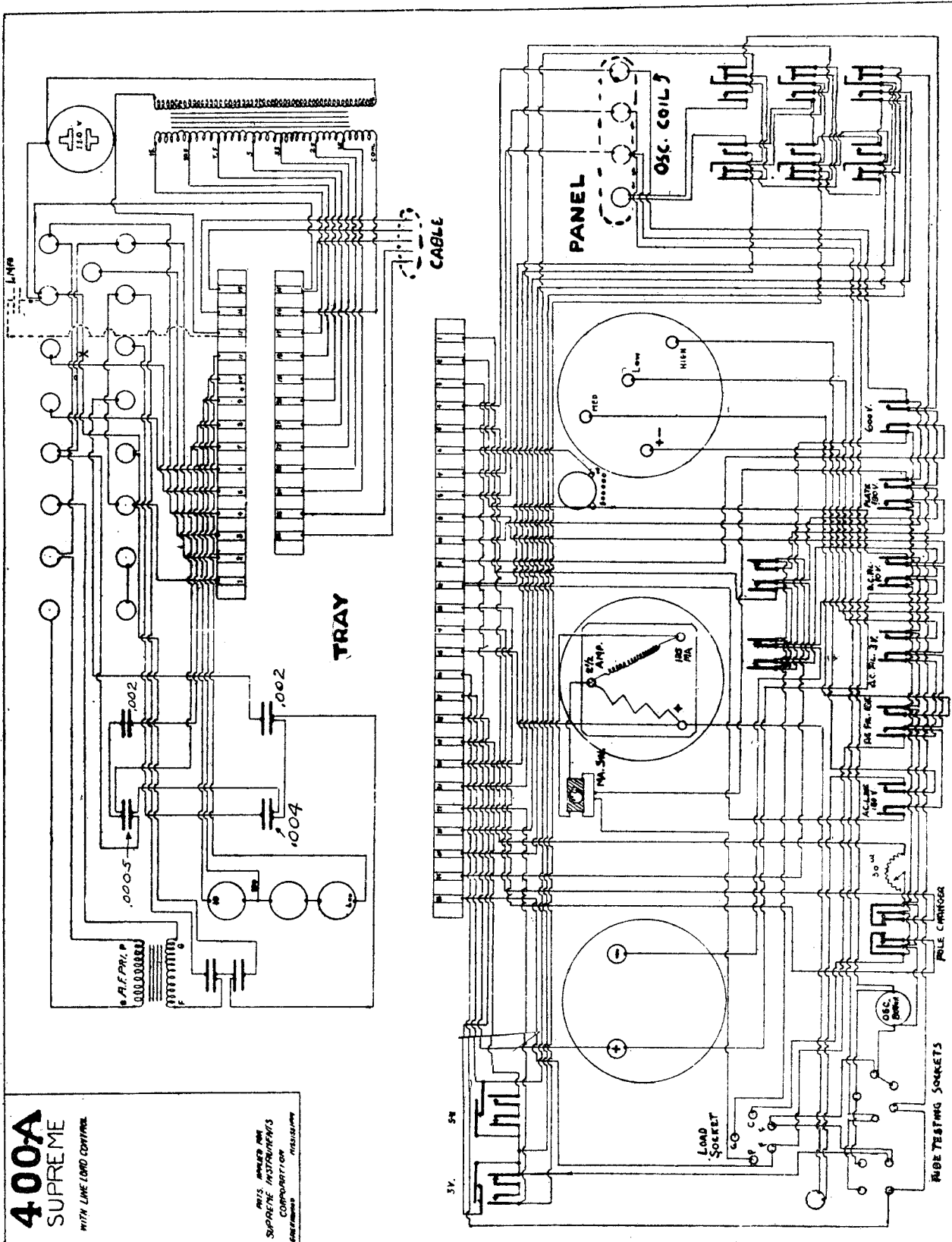
SUPREME INSTRUMENTS CORP.

MODEL 99-A Analyzer



MODEL 400-A
Diagnometer

SUPREME INSTRUMENTS CORP.

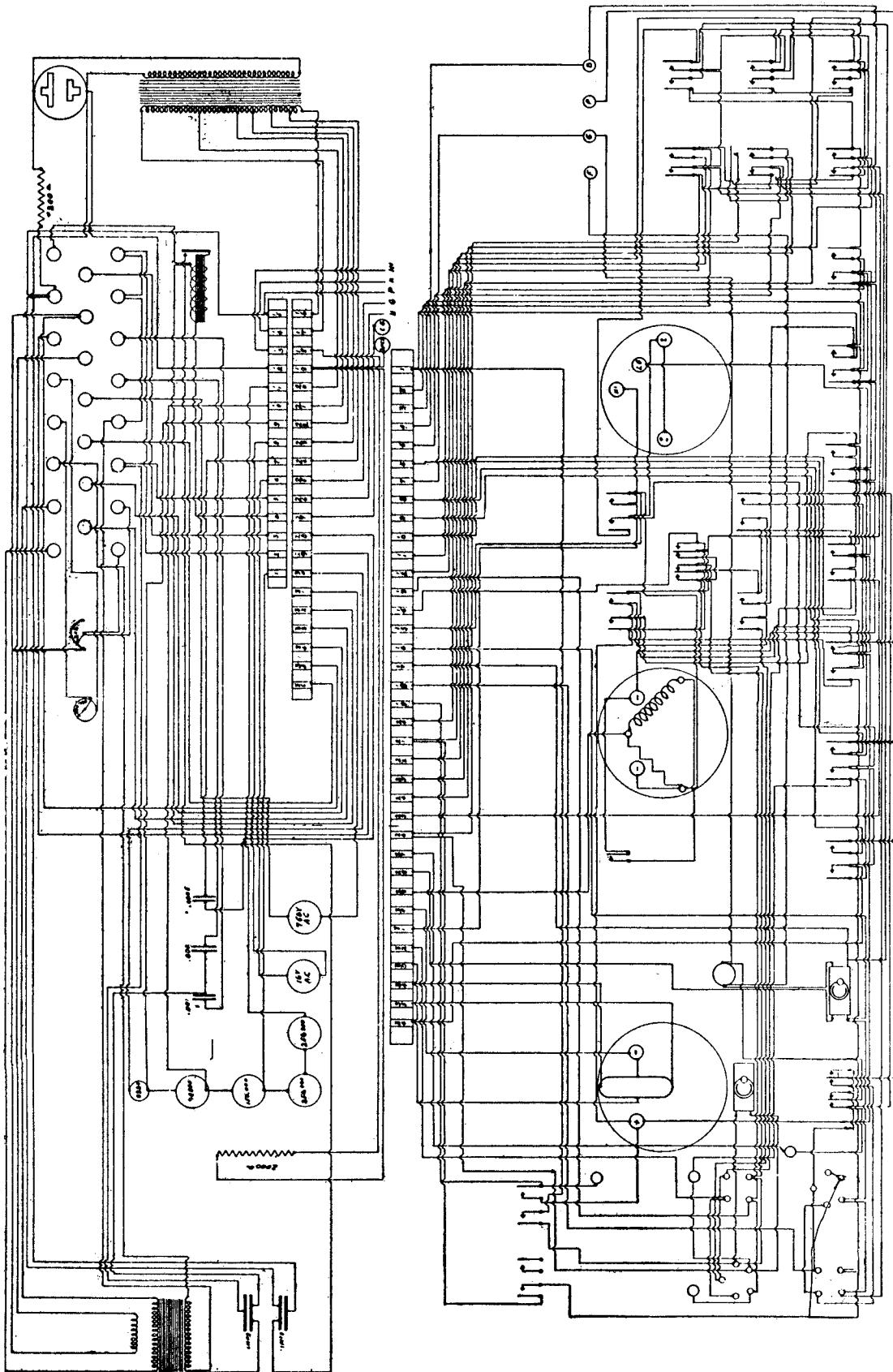


400A
SUPREME
 WITH LINE LOAD CONTROL

MADE IN U.S.A.
 SUPREME INSTRUMENTS
 CORPORATION
 1150 12th Street
 Berkeley, California

SUPREME INSTRUMENTS CORP.

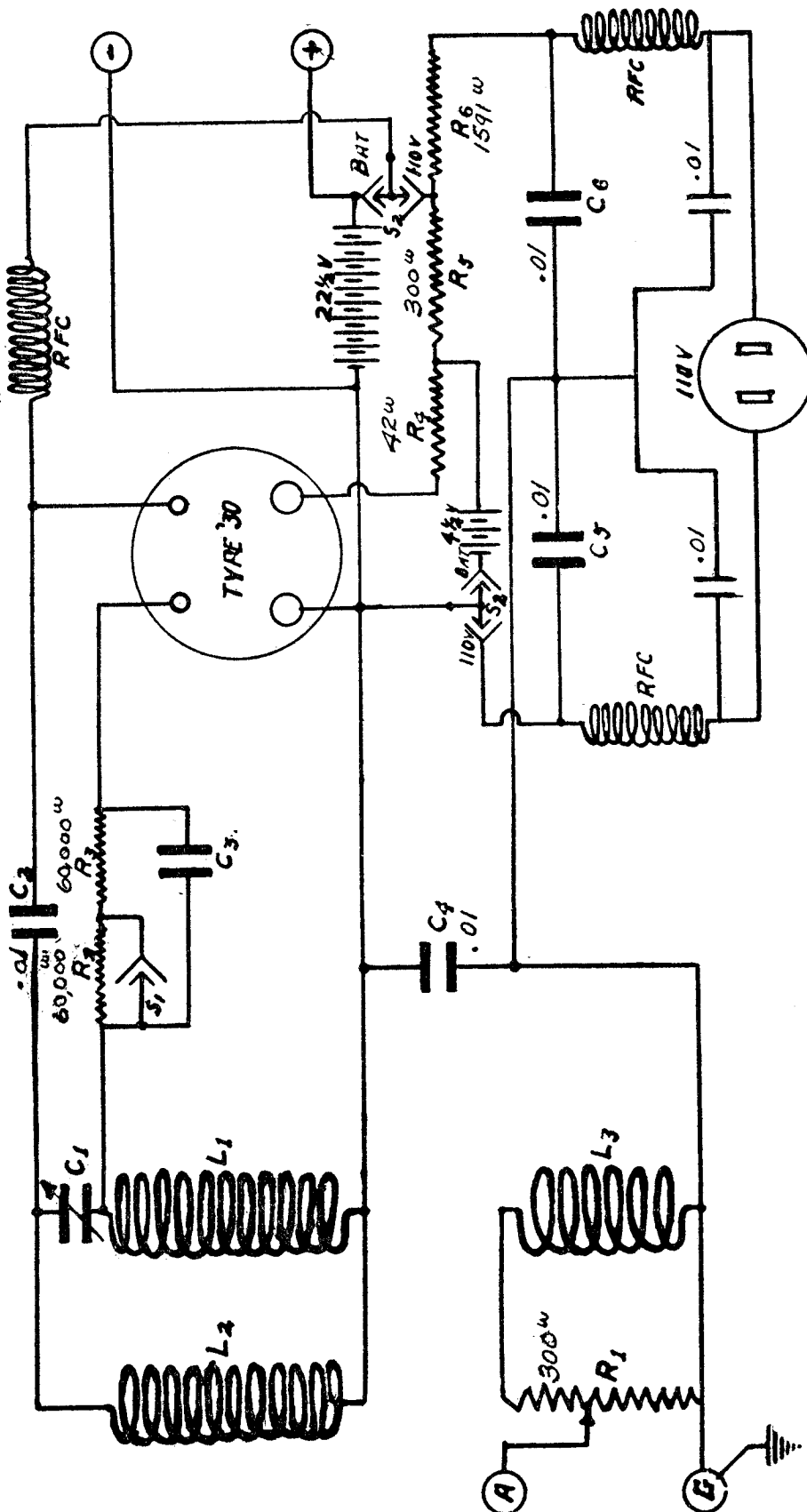
MODEL 400-B
#4 Series
Diagnometer



DESIGNED BY	W. J. GARDNER
DRAWN BY	D. J. GARDNER
CHECKED BY	D. J. GARDNER
APPROVED BY	D. J. GARDNER
DATE	10/1/54
SUPREME INSTRUMENTS CORP. GREENWOOD MISS.	
SUPREME 400B #4 Series	
509D	

MODEL 70 Oscillator

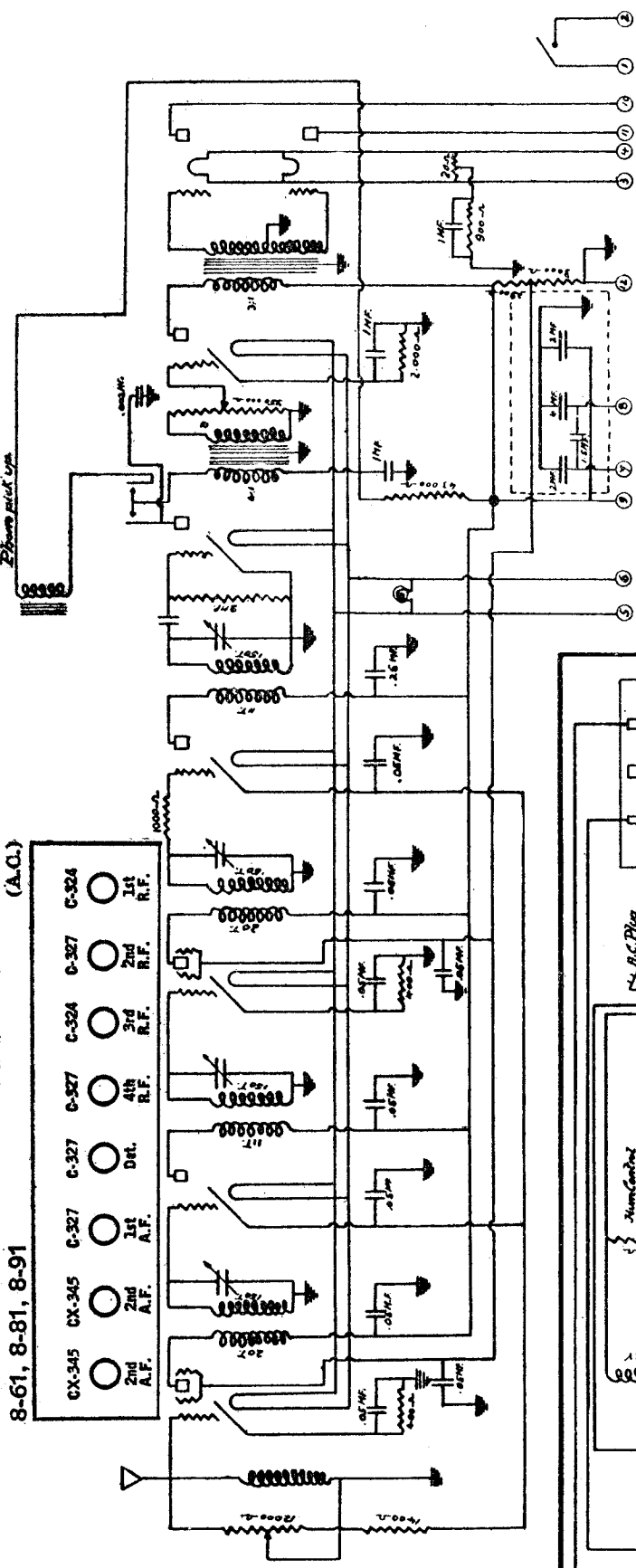
SUPREME INSTRUMENTS CORP.



DRAWN & TRACED	SUPREME INSTRUMENTS CORP. GREENWOOD - MISS.	SCHEMATIC CIRCUIT MODEL 70 OSCILLATOR
<i>W. L. G.</i>		
CHECKED	496-A	
<i>W. L. G.</i>		
APPROVED		
<i>W. L. G.</i>		

MODEL 8-61, 8-81, 8-91

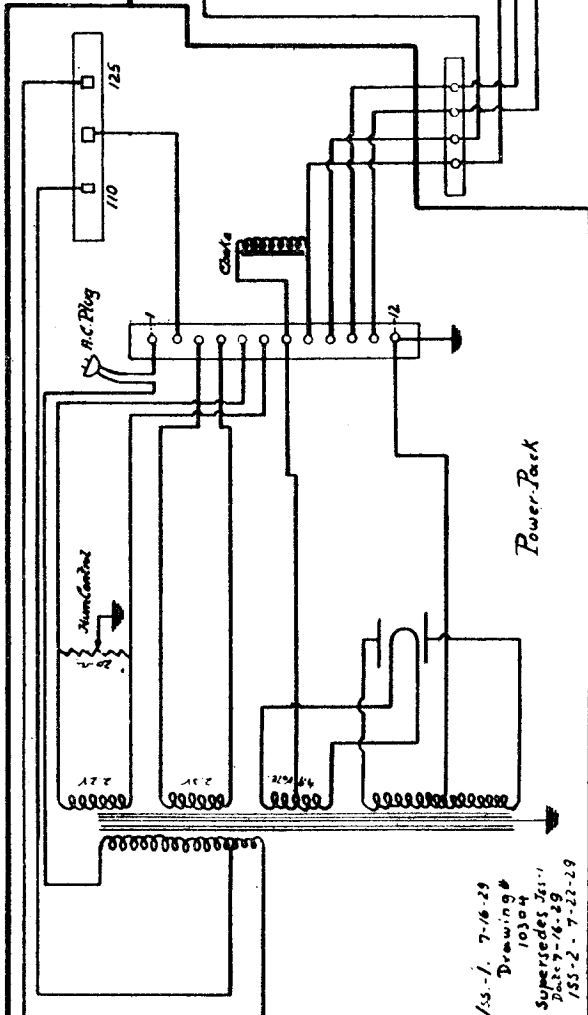
TEMPLE CORPORATION



1861-881-891

TEMPLE—Screen Grid—Models 861-881-891
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position Max

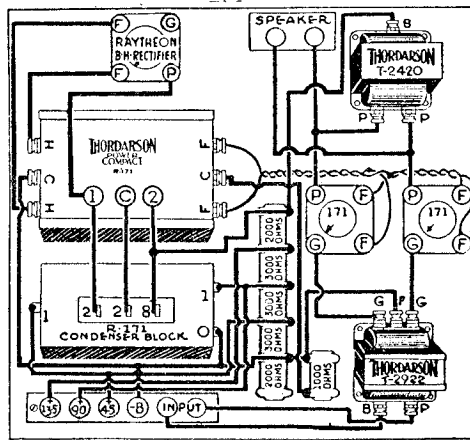
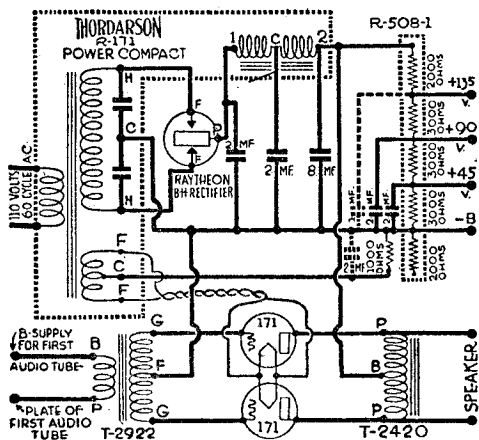
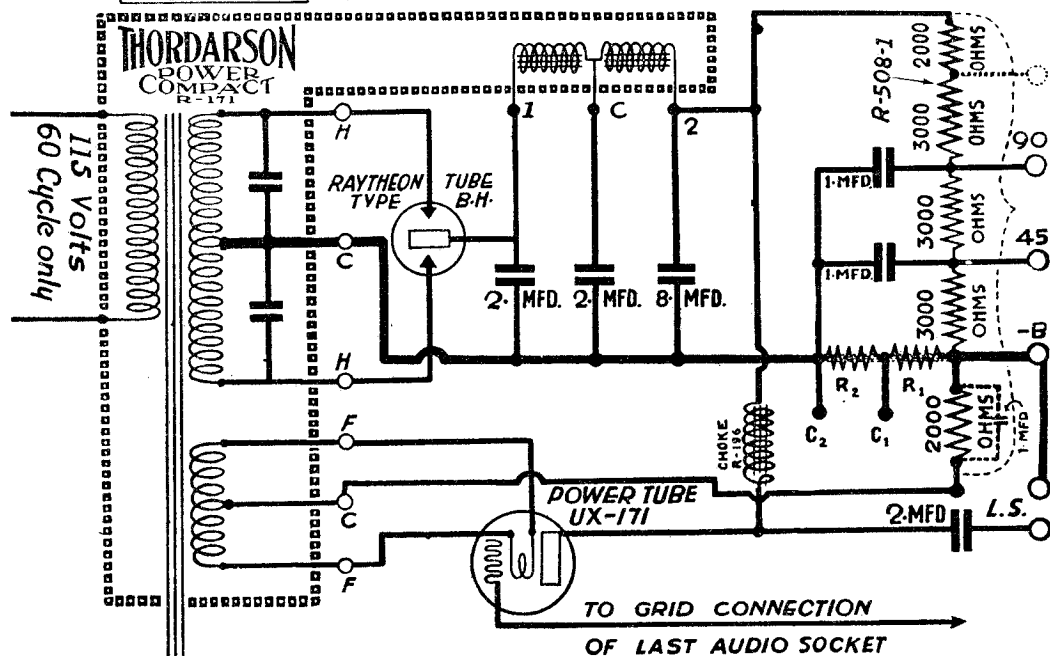
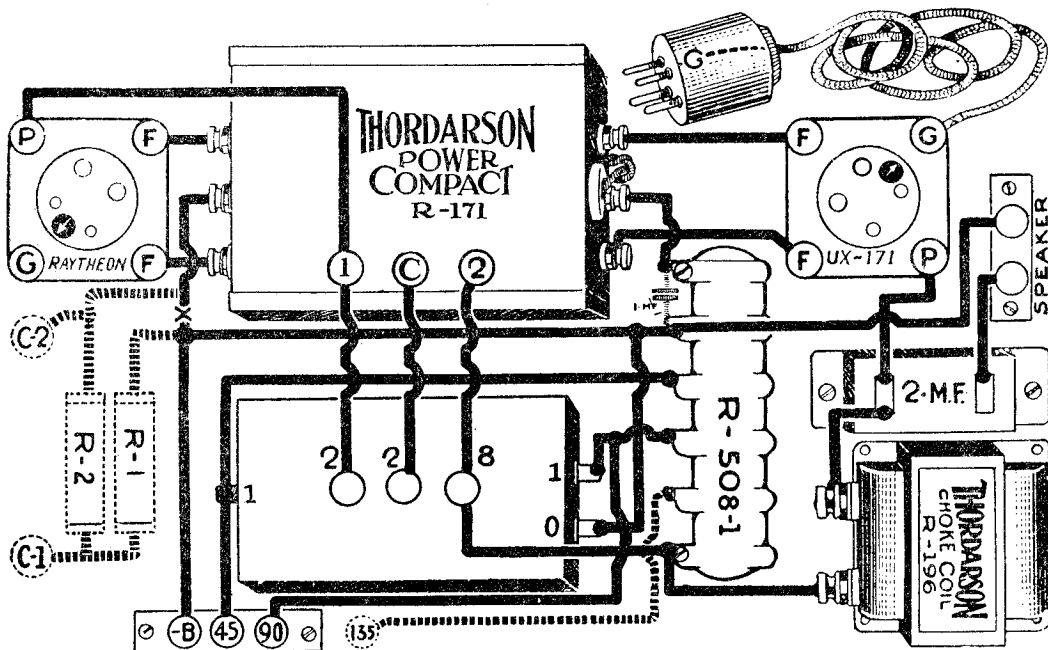
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET	TUBE OUT		TUBE IN TESTER		CATHODE HEATER VOLTAGE	NORMAL PLATE VOLTAGE	SCREEN GRID VOLTAGE	PLATE B-GRID CHANGE	SCREEN GRID
			A VOLTS	B VOLTS	A VOLTS	B VOLTS					
1	224	1st R.F.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
2	227	2nd R.F.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
3	224	3rd R.F.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
4	227	4th R.F.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
5	227	Det.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
6	227	1st A.	2.2	180	2.15	1.48	1.75	3.0	6	4.2	72
7	245	2nd A.	2.5	248	2.3	229	40	22	26	4	
8	245	2nd A.	2.5	248	2.3	229	40	22	26	4	
9	290	Rect.	5.6	-	5.3	-	-	-	-	-	-



155-1-7-16-29
Drawing # 10304
Supersedes 751-1
Date 7-16-29
155-2-7-22-29

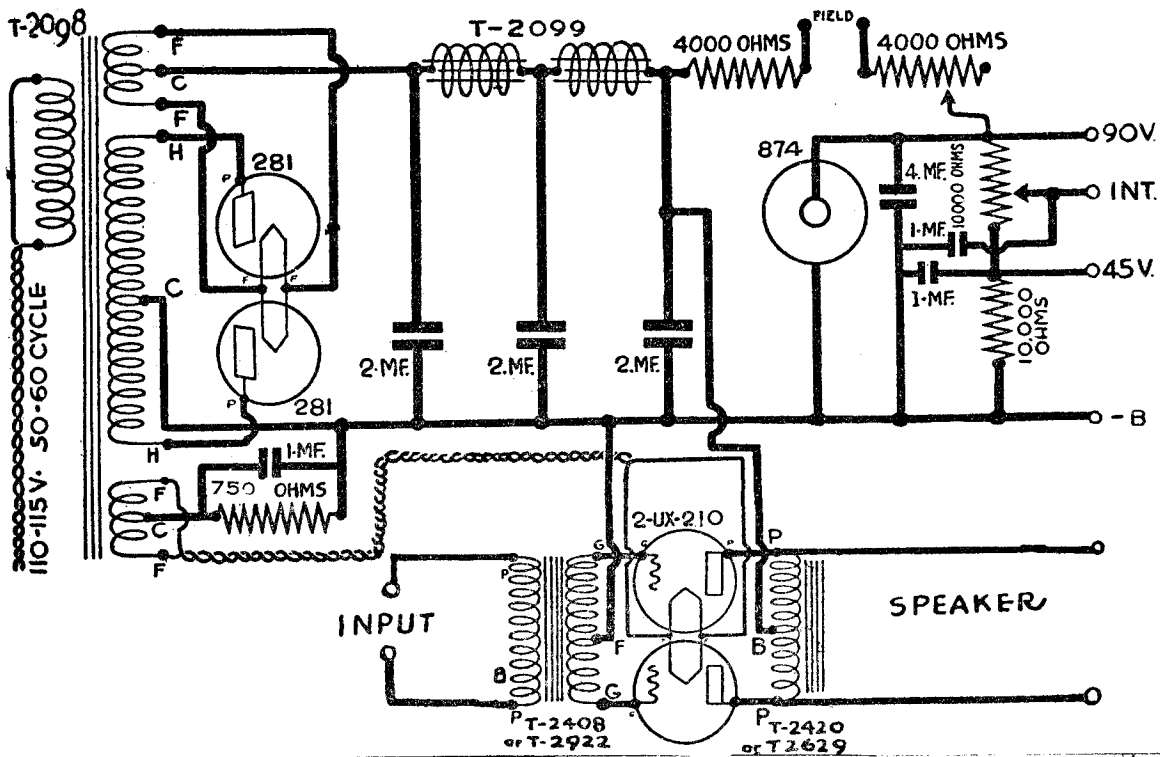
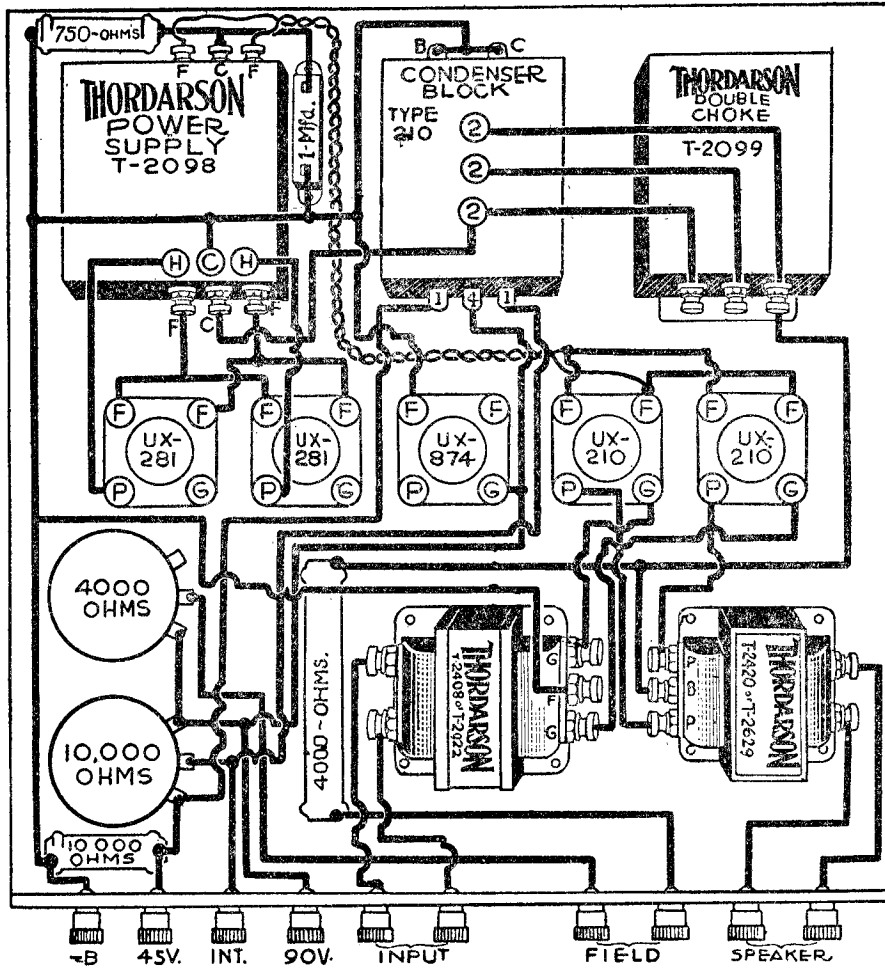
THORDARSON ELECTRIC MFG. CO.

MODEL R-171
MODEL PP-171



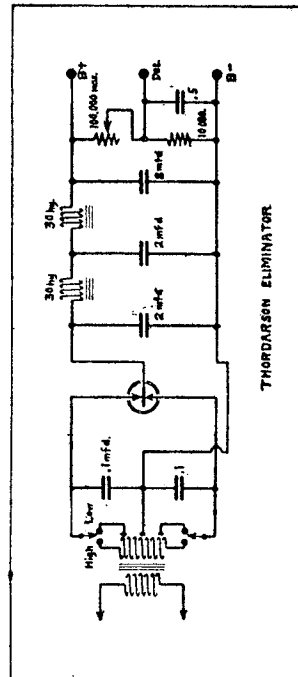
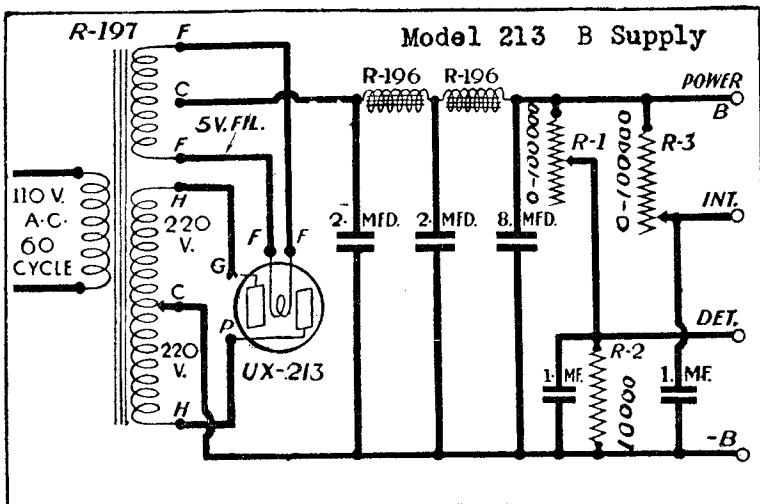
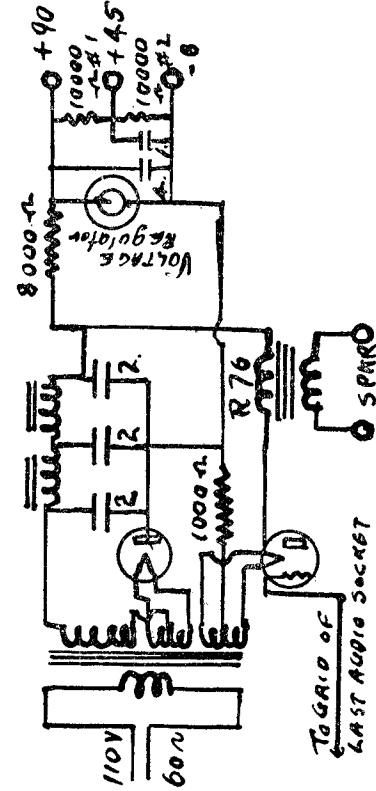
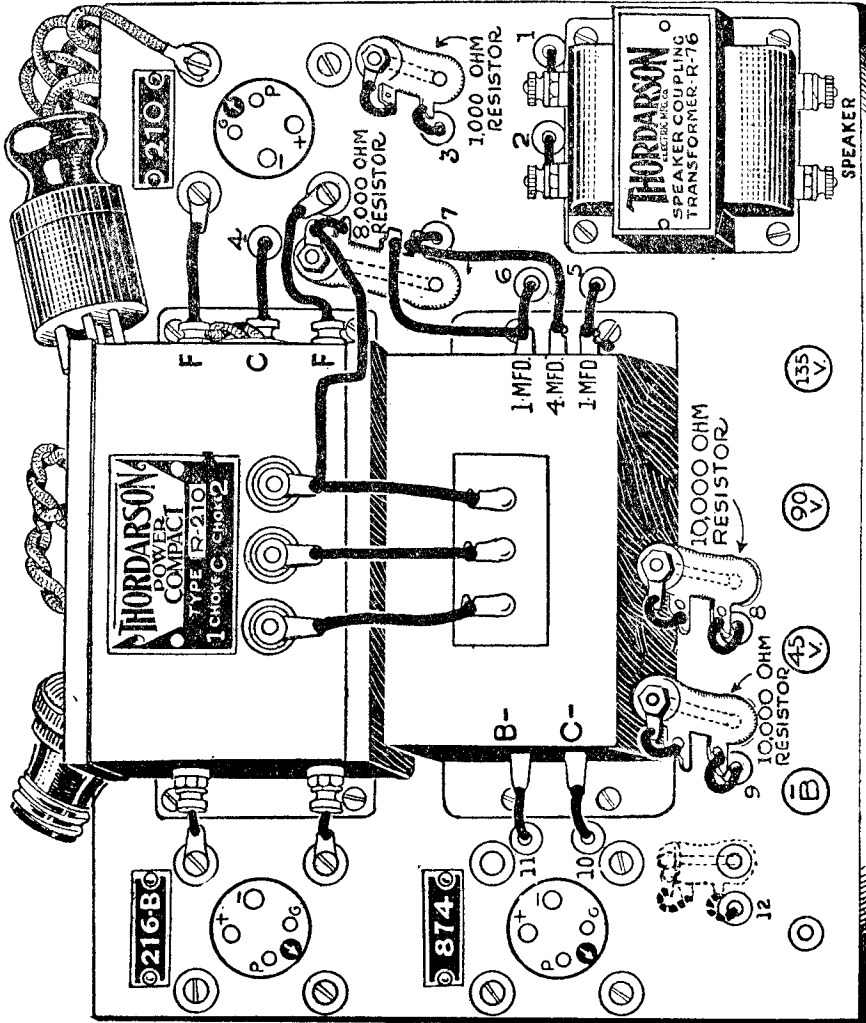
**MODEL 210
Power Amplifier**

THORDARSON ELECTRIC MFG. CO.



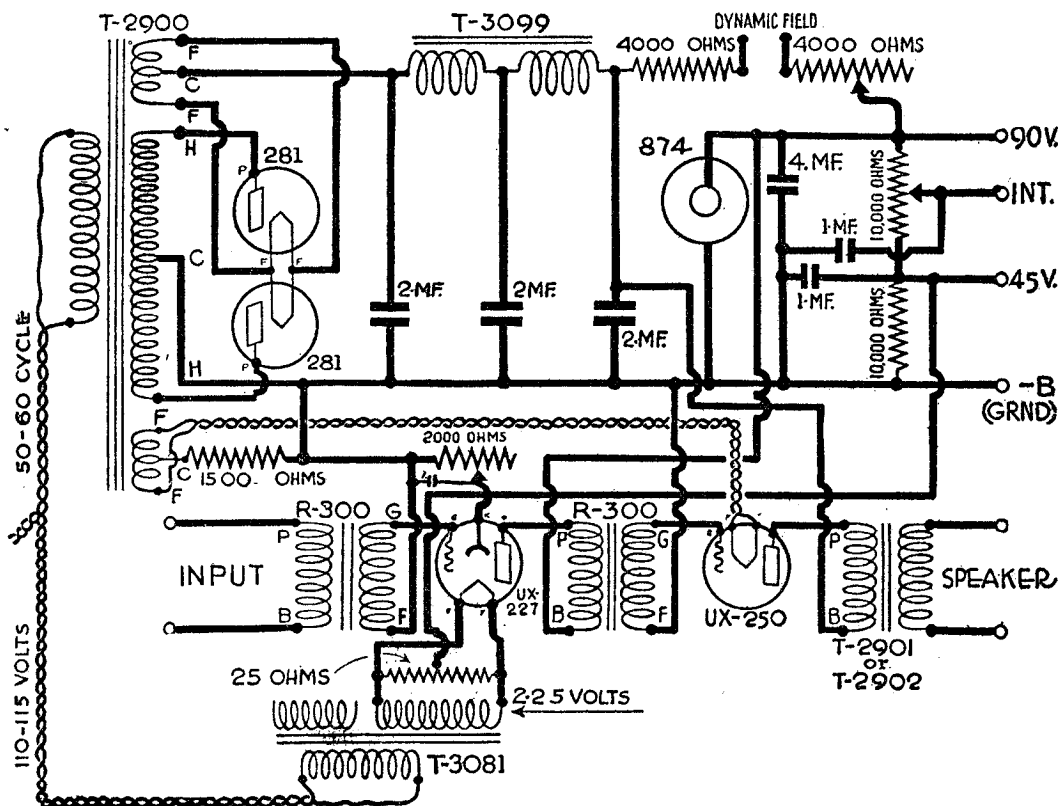
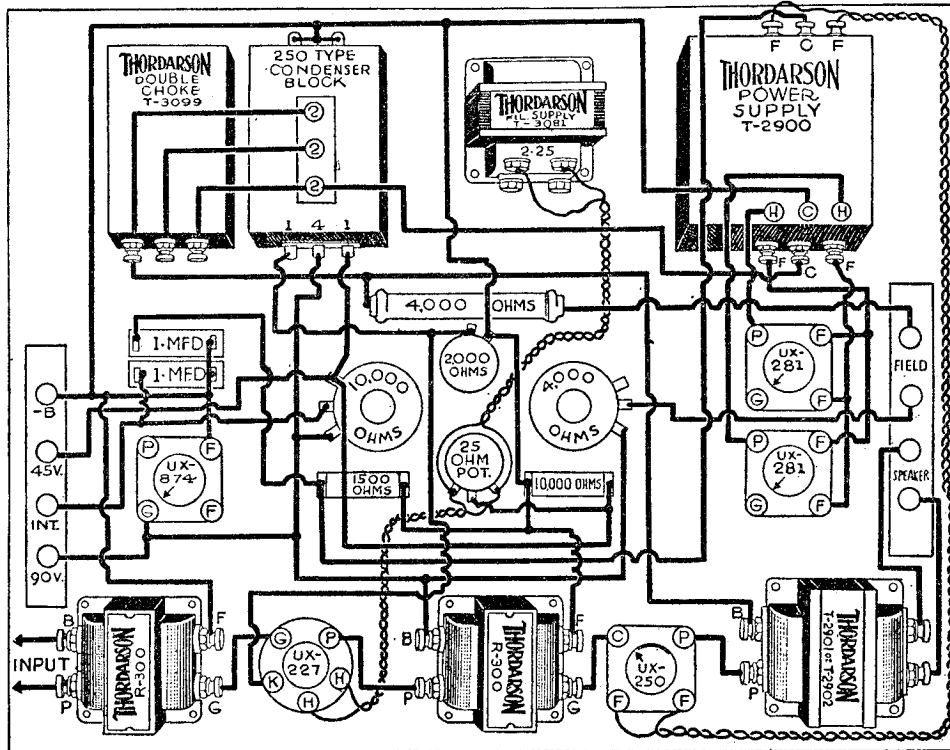
THORDARSON ELECTRIC MFG. CO.

MODEL R-210
 MODEL 213
 MODEL Eliminator



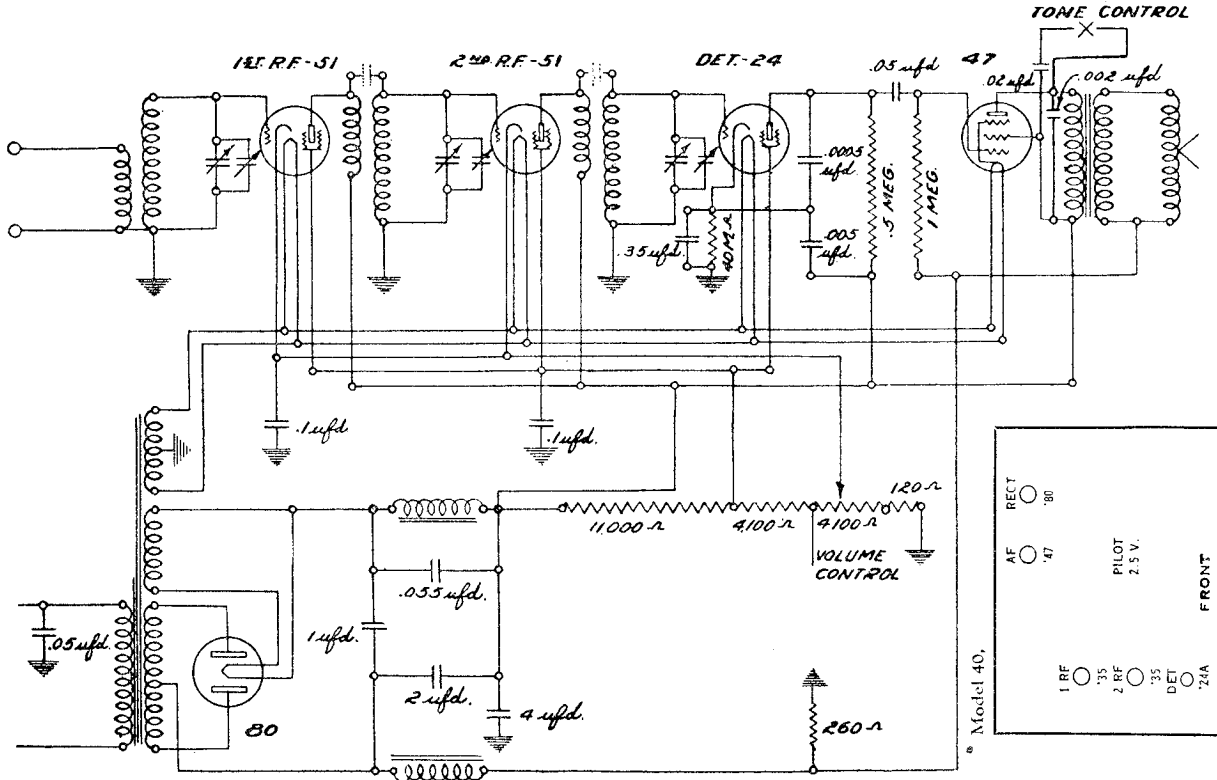
MODEL 250
Power Amplifier

THORDARSON ELECTRIC MFG. CO.



TRANSFORMER CORP. OF AMERICA

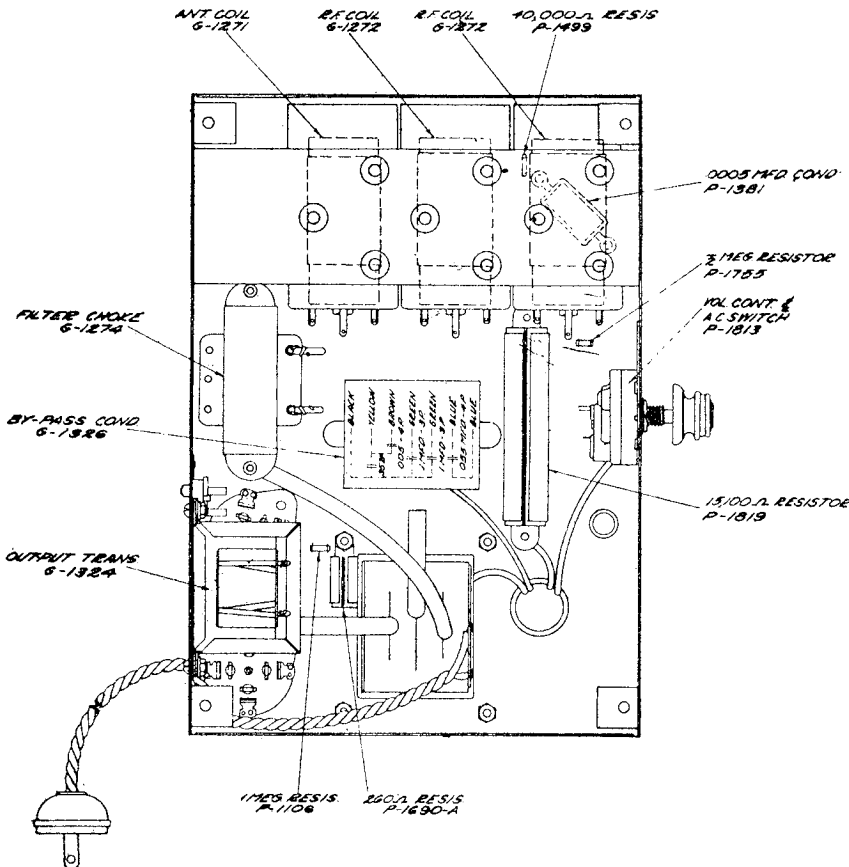
MODEL 40
Schematic
Voltage



MODEL 40

6-2-31

SPKR. FIELD



VOLTAGE ANALYSIS

READINGS TAKEN WITH WESTON MODEL 565 ANALYZER MODEL 40

No.	Stage	Type Tube	Fil. Volts	Plate Volts	Cont. Grid Volts	Cath. Volts	S. G. Volts	Ip. Normal
1	1st R. F.	C. L. 51	2.1	225	2.1	2	75	5
2	2nd R. F.	C. L. 51	2.1	230	2.2	2	75	4.5
3	Det.	C. L. 24	2.1	160	7	7.5	75	.02
4	Output	C. L. 47	2.1	215	5'	0	225	26.5
5	Rect.	C. L. 80	4.8	280				130

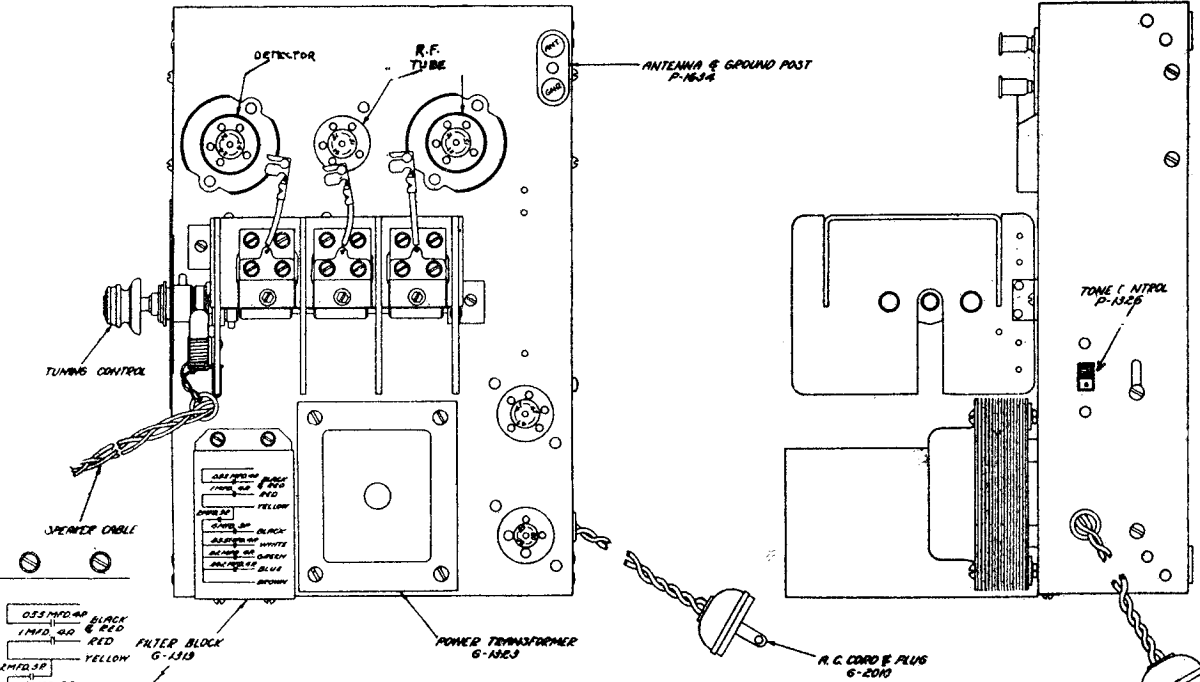
*Reading dependent upon resistance of meter.

†Reading taken for one anode only: 60 milliamperes would be about correct.

Volume control position full. Line voltage 115-60 cycle.

MODEL 40
Chassis
Data

TRANSFORMER CORP. OF AMERICA



MODEL 40

MODEL 40 CONTINUITY TEST TABLES

(Using 10-volt scale 1,000 ohms per volt; meter with 6-volt battery.)

Circuit Tested	From	To	Reading	Your Reading
Ant. coil pri.	Ant. post.	Ground	6.	
Ant. coil sec.	Grid 1st tube	Ground	6.	
1st R. F. Plate ckt.	Plate of tube	Brown lead of filter pack	6.	
1st R. F. Screen ckt.	Screen prong	Center lead Voltage divider	6.	
1st R. F. Cathode ckt.	Cath. prong	Center tap Volume Control "ON"	6.	
2nd R. F. Grid ckt.	Grid Clip	Ground	6.	
2nd R. F. Plate ckt.	Plate prong	Brown lead of filter pack	6.	
2nd R. F. Screen ckt.	Screen prong	Center tap Voltage divider	6.	
2nd R. F. Cathode ckt.	Cathode prong	Center tap Volume Control "ON"	6.	
Det. Grid ckt.	Grid Clip	Ground	6.	
Det. Plate ckt.	Plate prong	Brown lead of filter pack	6.	
Det. Screen ckt.	Screen prong	Center Voltage divider	6.	
Det. Cathode ckt.	Cathode prong	Ground	1.4	
P. Z. cont. grid.	Grid prong	Sec output trans. black lead	(slight deflection)	
P. Z. space chg. grid ckt.	S. C. Grid Prong	Brown lead of filter pack	6.	
P. Z. Plate ckt.	Plate prong	Brown lead of filter pack	5.7	
Output Sec.	One side	Other side	5.9	
Pri Power Trans.	Across A. C. Plug	Switch on	5.9	
Hi volts Sec.	Across 280 plate prongs		5.6	
Speaker field	Red wire	Green Wire	5.4	
Speaker voice coil	Green wire	Black	6.	
Filter Choke	Across red leads		5.6	
Voltage divider	Ground	Brown lead of filter pack	2.2	

RESISTANCE TABLE MODEL 40

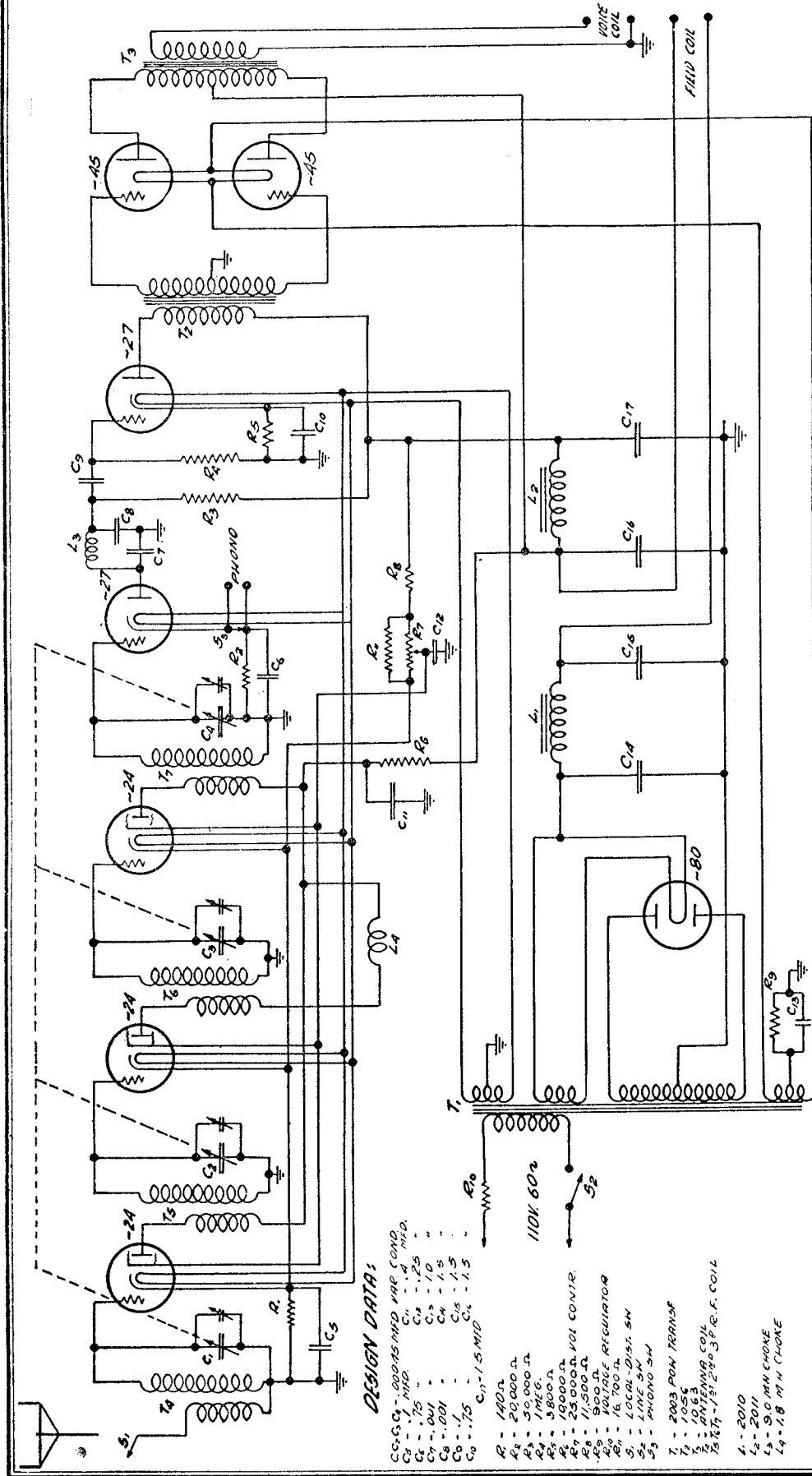
(Using 10-volt range meter 1,000 ohms per volt and 6-volt battery)

Item	Color Code*	From	To	Reading	Your Reading	Resistance in Ohms
Det. Cath. Resistor	Yel., Blk., Or.	Det. Cath.	Gnd.	1.3		40,000
Pent. Grid Resistor	Br. Blk., Green	Pent Grid	Spkt. Field	Slight Deflection		1,000,000
Wire Wound	Black	Voice Coil	Gnd.	5.9		260
Voltage Divider, Short End	Black	Volume Cont. Green Lead	S. G. Ckt.	4.2		4,100
Voltage Divider, Long End	Black	Plate	S. G. Ckt.	3.		11,000
Det. Plate Resistor	Gr., Blk., Yellow	Det. Plate	Pent. Space Chg. Grid.	.1		500,000
Vol. Control "on"		Gnd.	R. F. Cathode	4.2		4,100

*Color code: read body color first, tip second and dot last.

TRANSFORMER CORP. OF AMERICA

MODEL AC 51,53,55
Schematic
Voltage



DESIGN DATA:

- C1, C2, C3 - .00045 MFD VAR COND.
- C4 - .1 MFD
- C5 - .125 "
- C6 - .001 "
- C7 - .001 "
- C8 - .1 "
- C9 - .1 "
- C10 - .1 "
- C11 - .1 "
- C12 - .1 "
- C13 - .1 "
- C14 - .1 "
- C15 - .1 "
- C16 - .1 "
- C17 - .1 "
- R1 - 10K
- R2 - 20,000 Ω
- R3 - 50,000 Ω
- R4 - 1MEG.
- R5 - 3800 Ω
- R6 - 1000 Ω
- R7 - 25,000 Ω VOL CONTR.
- R8 - 1500 Ω
- R9 - 1000 Ω
- R10 - 1000 Ω
- R11 - 16,700 Ω
- R12 - LOCAL-DIAL SW
- S1 - LINE SW
- S2 - PHONE SW
- S3 - PHONE SW
- T1 - 2003 POW TRANSF
- T2 - 1056
- T3 - 1056
- T4 - 1056
- T5 - 1056
- T6 - 1056
- T7 - 1056
- T8 - 1056
- T9 - 1056
- T10 - 1056
- T11 - 1056
- T12 - 1056
- T13 - 1056
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- T98 - 1056
- T99 - 1056
- T100 - 1056

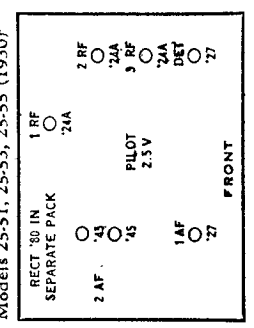
CLARION—Models 51, 53, 55.
Line Voltage 125—Volume Control Full On

Line Voltage 105

TUBE NO.	TYPE OF TUBE	POSITION	OPERATING VOLTAGES			MILLIAMPERES				
			PLATE OR CONTROL VOLTAGE	SCREEN VOLTAGE	GRID VOLTAGE	PLATE CURRENT	SCREEN CURRENT			
1	224	1 R.F.	2.09	1.46	2.43	87.5	2.43	2.72	5.55	2.83
2	224	2 R.F.	2.09	1.51	2.43	85.5	2.43	2.65	5.65	3.10
3	224	3 R.F.	2.09	1.51	2.43	87.5	2.43	2.75	5.8	2.92
4	227	Det.	2.09	1.34	-	12.2	1.15	.68	.78	.20
5	227	1 A.F.	2.14	1.70	-	1.22	13.6	3.31	4.08	.77
6	245	PP-AF	2.14	1.95	-	3.45	-	20.4	24.3	3.19
7	245	PP-AF	2.14	1.95	-	3.75	-	23.4	27.2	3.8
8	280	Rect.	4.51	-	-	-	-	35	35	-

Line Voltage 125

TUBE NO.	TYPE OF TUBE	POSITION	OPERATING VOLTAGES			MILLIAMPERES				
			PLATE OR CONTROL VOLTAGE	SCREEN VOLTAGE	GRID VOLTAGE	PLATE CURRENT	SCREEN CURRENT			
1	224	1 R.F.	2.47	1.56	3	84	3	3.1	6.5	3.4
2	224	2 R.F.	2.47	1.56	3	84	3	3.8	7.6	4.0
3	224	3 R.F.	2.47	1.56	3	84	3	3.5	7.9	4.4
4	227	Det.	2.47	1.37	-	12.6	13.5	.6	.85	.05
5	227	1 A.F.	2.48	1.98	-	1.0	16	4.2	4.9	.7
6	245	PP-AF	2.65	2.27	-	4.8	-	.22	2.6	.4
7	245	PP-AF	2.55	2.25	-	4.8	-	.27	3.2	.5
8	280	Rect.	5.3	-	-	-	-	41	41	-

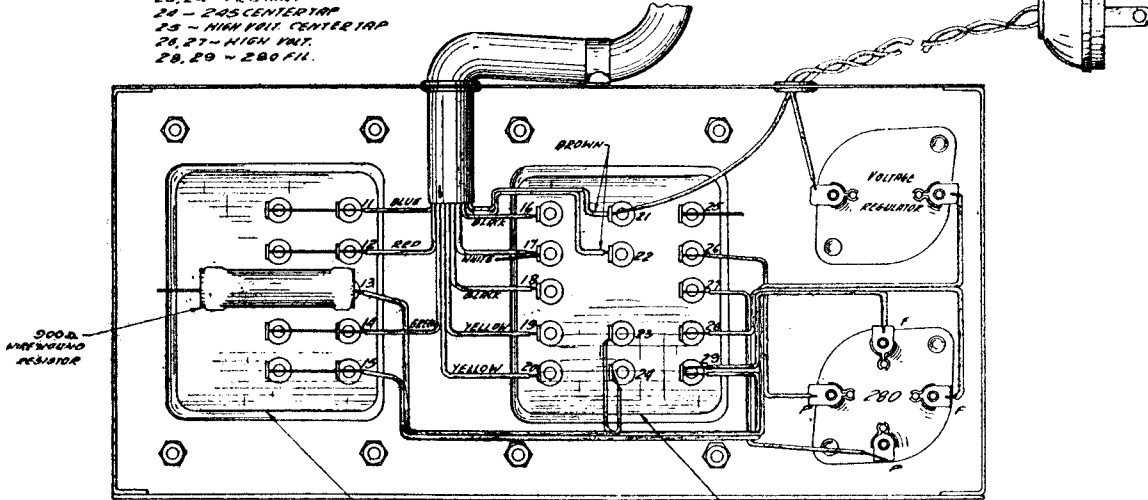
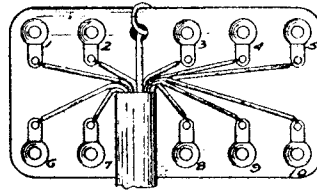


Models 25-51, 25-53, 25-55 (1930):

MODEL AC 51,53,55
 Power Pack View
 Receiver Breakdown

TRANSFORMER CORP. OF AMERICA

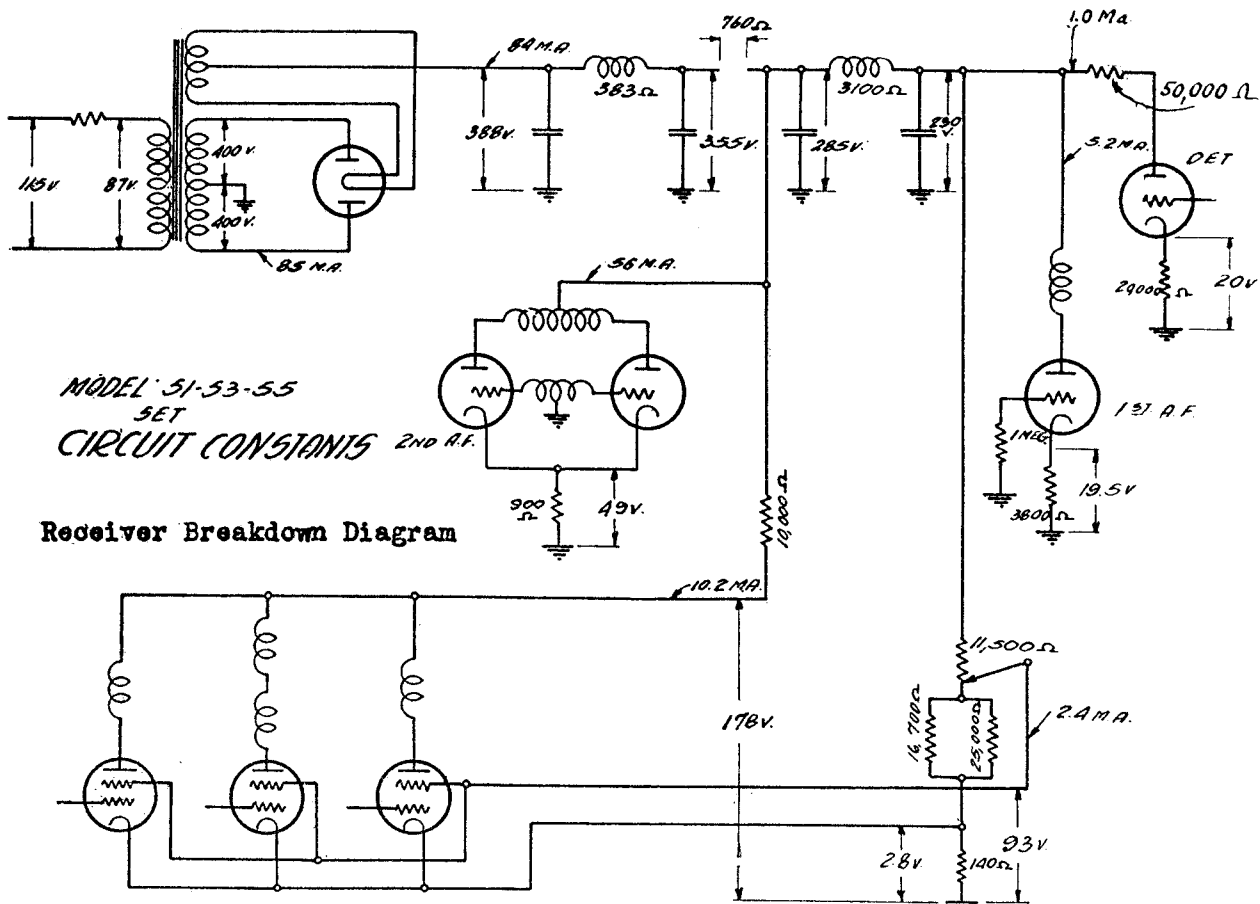
- 11 - 1.5 MFD
- 12 - 1.5 "
- 13 - 1.0 "
- 14 - 1.5 "
- 15 - 1.5 "
- 16, 18 - 220-27 HERTZ
- 17 - 220-27 CENTER TAP
- 19, 20 - 280 F.I.L.
- 21 - DUMMY LOAD
- 23, 24 - POLARIZED
- 24 - 245 CENTER TAP
- 25 - HIGH VOLT. CENTER TAP
- 26, 27 - HIGH VOLT.
- 28, 29 - 280 F.I.L.



Power Pack View

CONDENSER PACK

POWER TRANSFORMER PACK



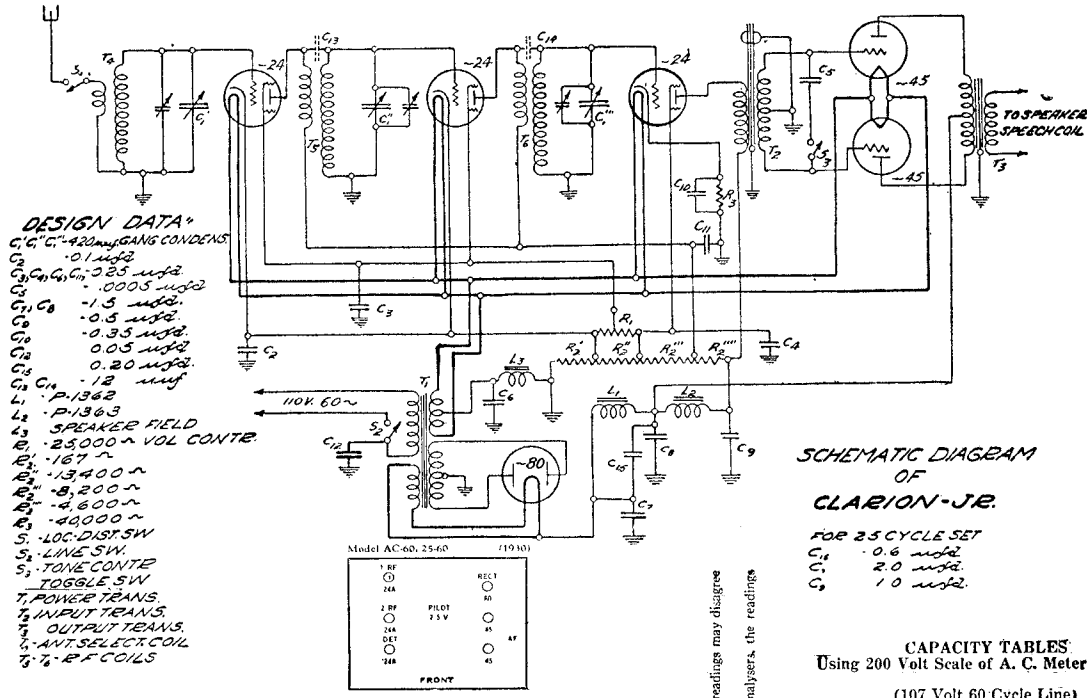
MODEL 51-53-55
 SET

CIRCUIT CONSTANTS 2ND A.F.

Receiver Breakdown Diagram

TRANSFORMER CORP. OF AMERICA

MODEL AC-60, 25-60
Schematic
Voltage Data



SCHEMATIC DIAGRAM OF CLARION-JR. FOR 25 CYCLE SET
 C₁ - 0.6 mfd
 C₂ - 2.0 mfd
 C₃ - 1.0 mfd

CAPACITY TABLES
Using 200 Volt Scale of A. C. Meter

(107 Volt 60 Cycle Line)

No.	Capacity	Reading	Your Reading	Part No.
C-2	0.10	45.0		G-1136
C-3	0.25	70.0		G-1136
C-11	0.35	87.0		G-1136
C-10	0.35	85.0		G-1108
C-4	0.25	78.0		G-1108
C-12	0.05	20.0		G-1108
C-15	0.20	67.0		G-1106
C-7	1.5	105.0		G-1106
C-8	1.5	105.0		G-1106
C-9	0.5	95.0		G-1106
C-6	0.25	75.0		G-1106

25 Cycle Filter Pack Readings on 107 Volt 30 Cycle

C-15	0.6	85.0		G-1132
C-7	2.0	103.0		G-1132
C-8	1.5	102.0		G-1132
C-9	1.0	97.0		G-1132
C-6	0.25	44.0		G-1132

Note: Above capacity values are for latest specifications. Previous production to Nov. 1st, 1930, will give higher values.

RESISTANCE TABLES
Using 6 Volt Battery with 0-10 Voltmeter (1000 Ohms Per Volt)

Item tested	From	To	Reads	Your Reading	Resistance (ohms)*
Voltage Divider with volume control connected ac. vs taps 1-2	Ground	Tap 1	6.0		167
	Ground	Tap 2	3.3		8900
	Ground	Tap 3	2.2		17000
	Ground	Tap 4	1.9		21600
Det. Bias resist.	Ground	Det. cath. prong	1.2		40000
Volume control	Across volume control (disconnected)		1.8		25000
L. 1. filter choke	Center Tap	280 Ω. Output Trans.	5.9		226
L. 2. filter choke	Center Tap	Plt. prong det.	5.0		2000

L. 1. and L. 2. for 25 cycle same as above

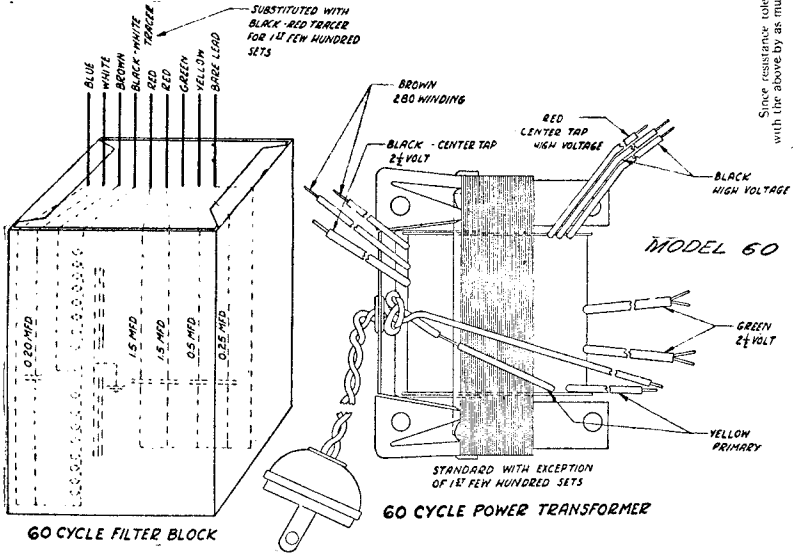
Line Volts—105 Volts

No	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	I _p G.D.	I _p '-I _p (Diff)	SG Volts
1	1st r f	24	2.05	165	2.6	44	*2.1	3.6	1.5	76
2	2nd r f	24	2.05	165	2.6	44	*2.3	3.8	1.5	76
3	Det.	24	2.06	196	*7.0	*26	*0.2	*1.3	*1.1	*70
4	AF	45	2.15	230	45.0	52	28	82	4.0	
5	AF	45	2.15	230	45.0	52	25	29	4.0	
6	Rect.	80	4.6							

Line Volts—125 Volts

No	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	I _p G.D.	I _p '-I _p (Diff)	SG Volts
1	1st r f	24	2.55	197	3.1	50	2.7	4.7	2.0	97
2	2nd r f	24	2.55	197	3.1	50	3.0	5.0	2.0	97
3	Det.	24	2.55	250	*8	*32	*0.2	*1.6	*1.4	*86
4	AF	45	2.65	276	52	52	35	40	5.0	
5	AF	45	2.65	276	52	52	31	35	5.0	
6	Rect.	80	5.4							

Since resistance tolerances in the set are plus or minus 10% and tubes may vary 10 to 20% your readings may disagree with the above by as much as 20% in rare cases.
 *Because of high resistance in the cathode circuit of this tube, together with the circuit used in most analysers, the readings marked with an asterisk may vary over 100% when using different meter scales.



MODEL AC-60,25-60
Chassis View
Continuity Test

TRANSFORMER CORP. OF AMERICA

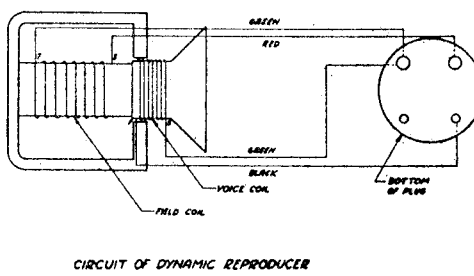
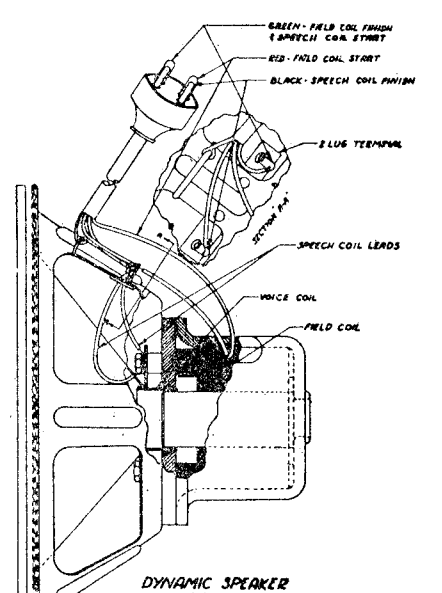
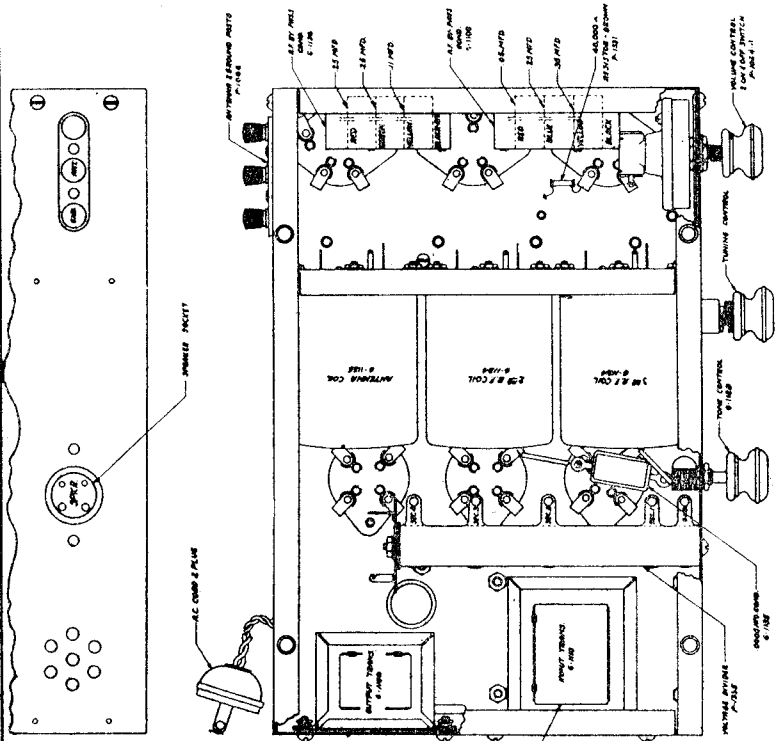
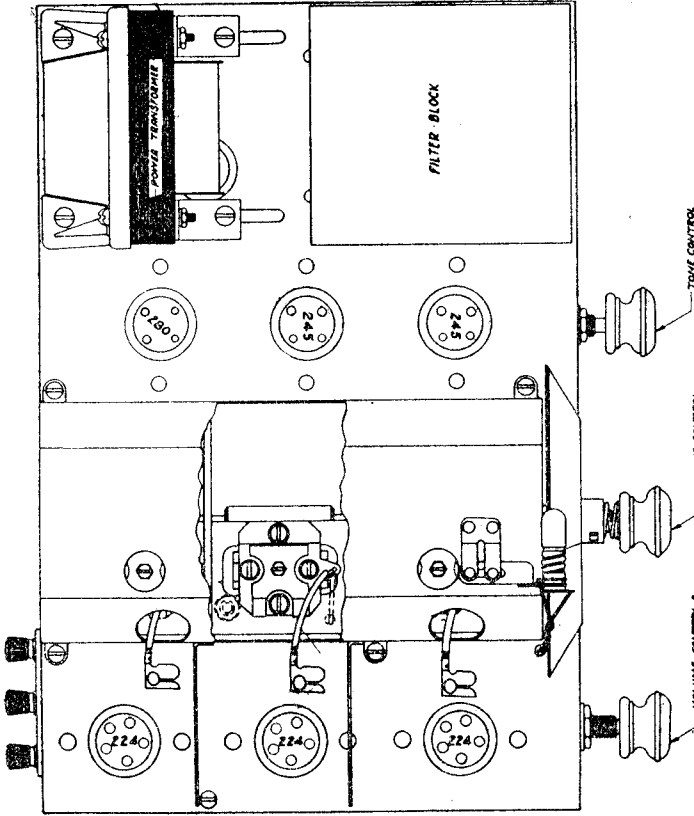
In some A.C. 60 models a phonograph jack was provided through which phonograph records may be reproduced. The phonograph pickup to be used with the set should have an impedance of 5000 ohms at 1000 cycles. We recommend Audak, Webster, Toman.

Model A. C. 60 receivers are designed for operation on 105 to 125 volt 50 to 60 cycle alternating current. The models 25-60 are to be operated on 105 to 125 volts 25 to 40 cycle alternating current only.

CONTINUITY TEST TABLES

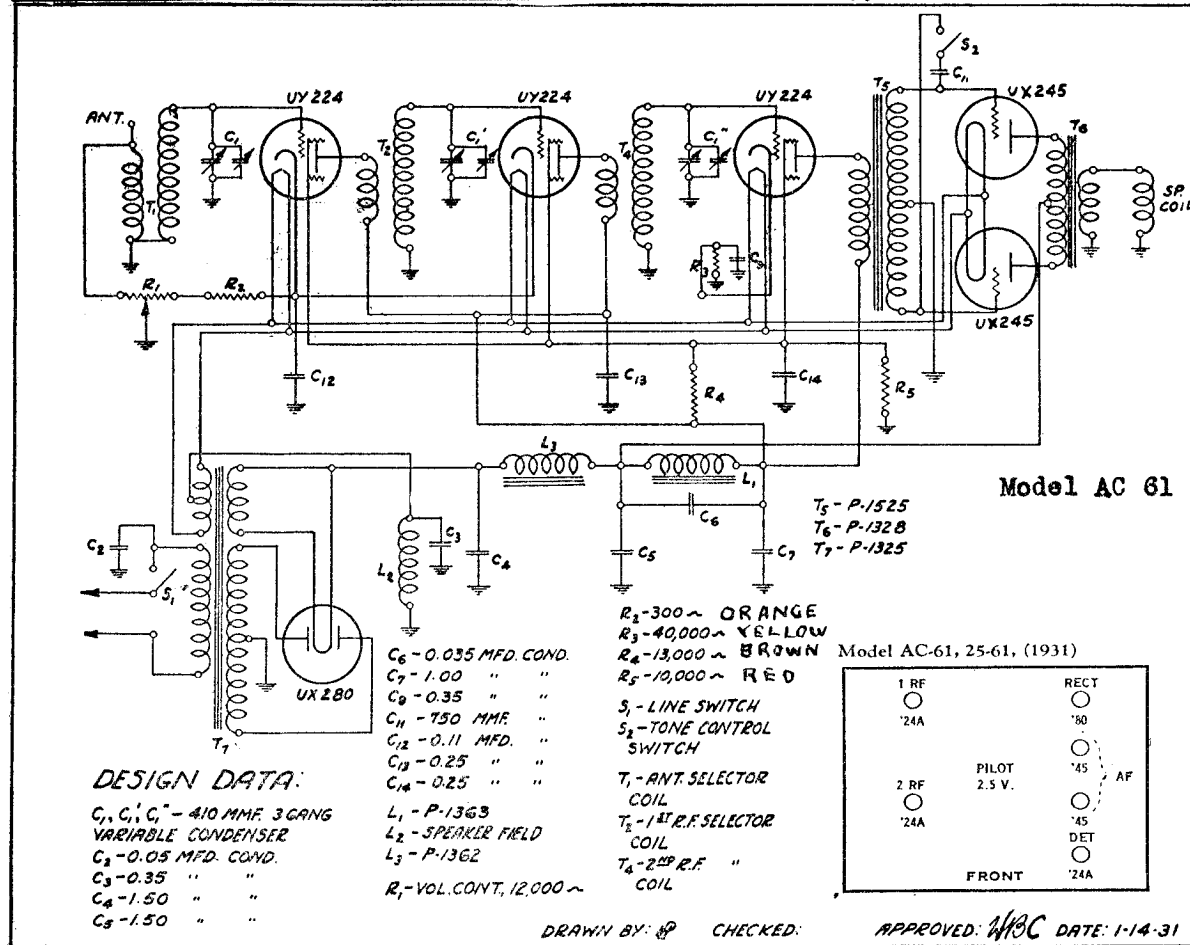
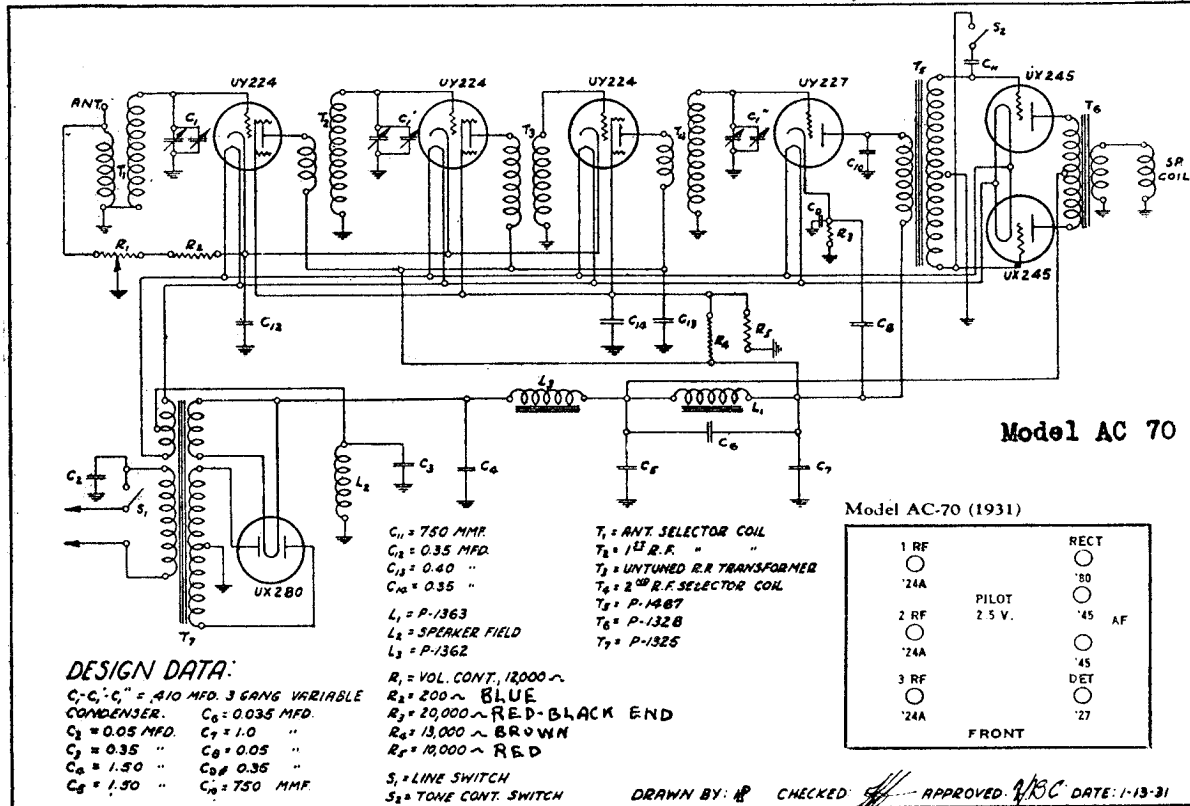
Using 6 Volt Battery with 0-10 Voltmeter (1000 Ohms Per Volt)

Circuit Tested	From	To	Reads
Antenna coil	Blank binding post	Ground	6 0
1st r. f. grid ckt.	Grid cap 1st r. f.	Ground	6 0
1st r. f. plate ckt.	Plate prong at socket	3rd tap divider	6 0
2nd r. f. grid ckt.	Grid cap 2nd r. f.	Ground	6 0
2nd r. f. plate ckt.	Plt. prong at socket	3rd tap divider	6 0
Det. plt. ckt.	Plt. prong det. socket	4th tap divider	3 4
Det. grid ckt.	Grid cap det.	Ground	6 0
245 grid ckt.	Alternate grids	Ground	4 3-4 5
245 pit. ckt.	Alternate plates	Center tap output trans.	5 9
Output trans. sec.	Green lead spkr. socket	Ground	6 0
Speaker field	Spkr. socket	Ground	5 6
Pr. power trans.	Across AC line plug (switch on)		6 0
280 fil. sec.	Across 280 socket filament prongs		6 0
245-224 fil. sec.	Across 245 socket filament prongs		6 0
High voltage sec.	Across 280 plate prongs		5 8
L. 1. filter choke	Center tap output trans.	280 fil. prong	5 9
L. 2. filter choke	Center tap output trans.	Det. socket plate prong	5 0



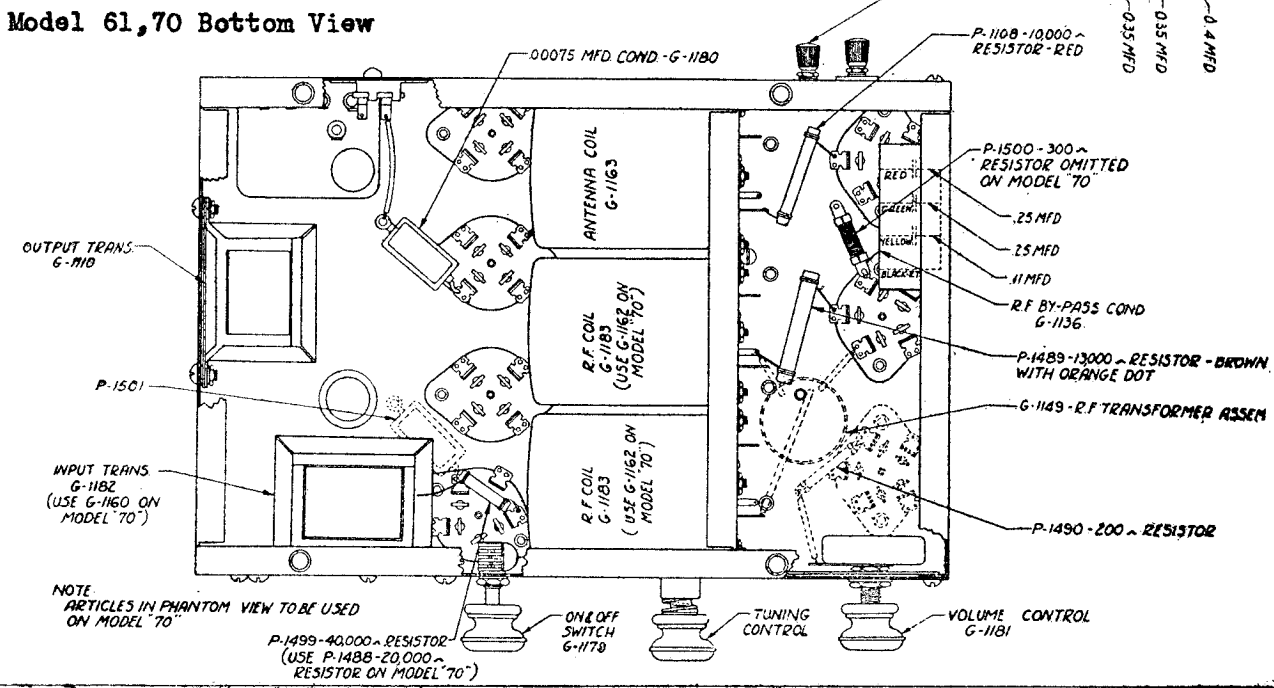
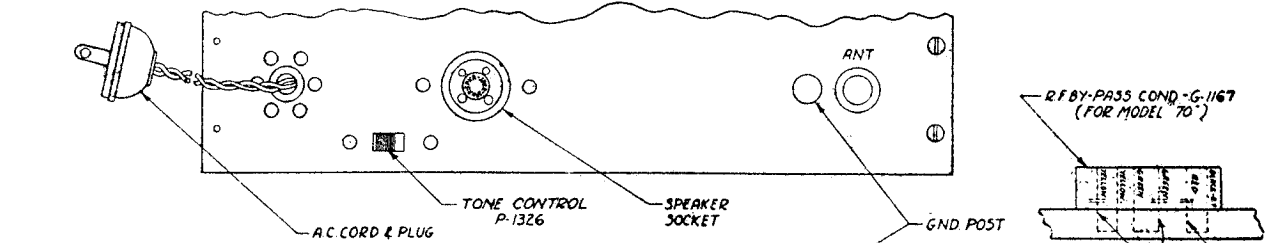
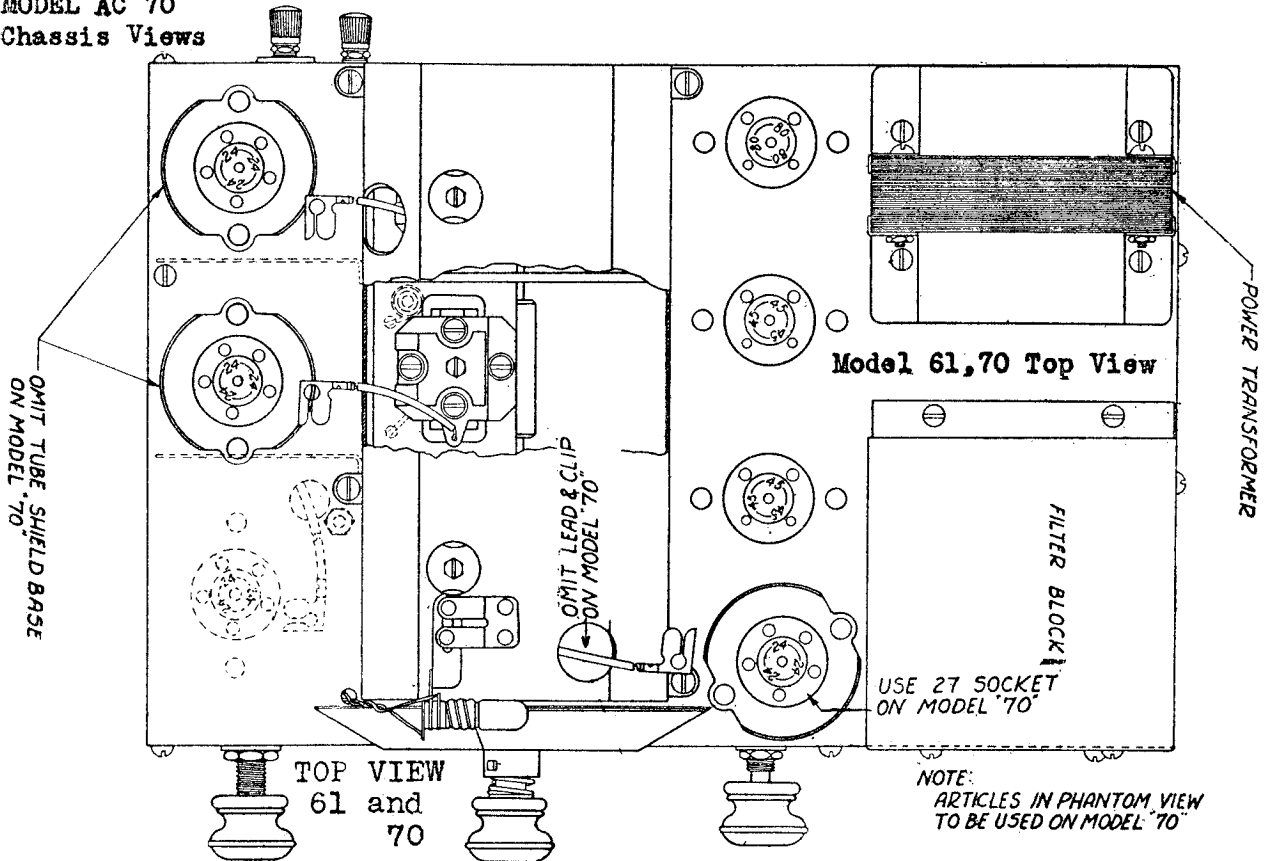
TRANSFORMER CORP. OF AMERICA

MODEL 61 AC
MODEL 70 AC



MODEL AC 61
Chassis Views
MODEL AC 70
Chassis Views

TRANSFORMER CORP. OF AMERICA



TRANSFORMER CORP. OF AMERICA

MODEL AC 61
Voltage - Data
MODEL AC 70
Voltage - Data

NOTE.. Continuity test is made with 6 volt battery, 10 volt meter rated at 1000 ohms per volt.

READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
Model 61 Line 115 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	Ip' Norm.	SG Volts
1	1st r. f.	224	2.40	260	3.2	50.0	4.3	100.0
2	2nd r. f.	224	2.35	260	3.2	50.0	4.3	100.0
3	Det.	224	2.40	260	8.0	42.0	0.200	100.0
5	AF	245	2.42	290	53.0		34.0	
6	Rect.	280	5.00				34.0	

115 Volts { 280 Fil. to Gnd.—320 Volts D.C.
L1 & L2 Center tap to Gnd. 300 Volts D.C.
End of Choke L2 to Gnd. 260 Volts D.C.

Model 70 Line 115 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	Ip' Norm.	SG Volts
1	1st r. f.	224	2.37	250	3.0	50.0	4.0	90
2	2nd r. f.	224	2.30	250	3.0	50.0	4.0	90
3	3rd r. f.	224	2.30	250	3.0	50.0	4.0	90
4	Det.	227	2.38	250	20.0	33.0	1.00	
5	AF	245	2.42	290	53.0		34.0	
6	AF	245	2.43	290	53.0		34.0	
7	Rect.	280	5.00					

115 Volts { 280 Fil. to Gnd.—320 Volts D.C.
L1 & L2 Center tap to Gnd.—300 Volts D.C.
End of Choke L2 to Gnd. 250 Volts D.C.

Note: Since Resistance tolerances in the set are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%.

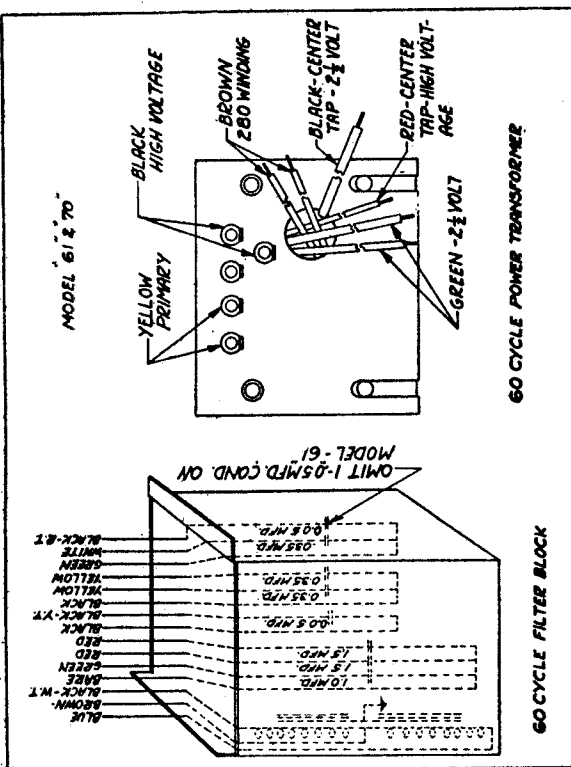
CAPACITY TABLES

Using 200 Volt Scale of A. C. Meter Included in Weston No. 565 Analyser

No.	Capacity	MODEL 61 (115 Volt 60 Cycle Line)		MODEL 70 (115 Volt 60 Cycles)	
		Reading	Your Reading	Reading	Your Reading
C-2	0.05	20.0	28.0	0.05	28.0
C-3	0.35	95.0	95.0	.35	95.0
C-4	1.50	115.0	115.0	1.50	115.0
C-5	1.50	115.0	115.0	0.85	25.0
C-6	0.85	30.0	30.0	1.0	112.0
C-7	1.0	110.0	110.0	0.05	30.0
C-9	35	92.0	92.0	35	92.0
C-12	11	45.0	45.0	35	92.0
C-13	25	86.0	86.0	.40	97.0
C-14	25	80.0	80.0	.35	95.0

CONTINUITY TEST TABLES
Models 61 and 70

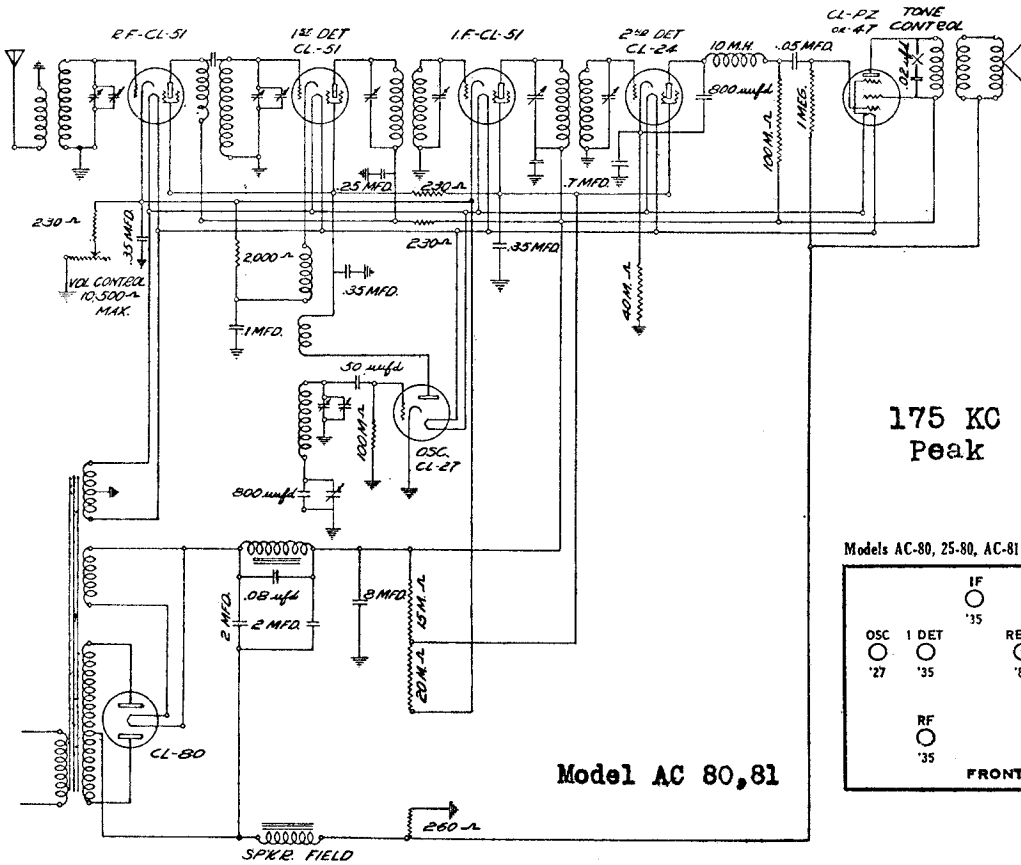
Circuit Tested	From	To	Reads	
			61	70
Antenna coil	Antenna post	Ground	6.0	6.0
1st r. f. grid ckt.	Grid cap 1st r. f.	Ground	6.0	6.0
1st r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.	6.0	6.0
1st r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.	2.6	2.6
2nd r. f. grid ckt.	Grid cap 2nd r. f.	Ground	6.0	6.0
2nd r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.	6.0	6.0
2nd r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.	2.6	2.6
3rd r. f. grid ckt.	Grid cap 3rd r. f.	Ground		6.0
3rd r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.		6.0
3rd r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.		2.6
Det. grid ckt.	Grid cap or prong	Ground	6.0	6.0
Det. plate ckt.	Plate prong at skt.	Opposite term. input trans.	4.0	5.1
Det. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.	2.6	
Any screen grid	Screen prong skt.	Ground	3.0	3.0
245 grid ckt.	Alternate grids	Ground	7.4	3-4.2
245 plate ckt.	Alternate plates	Center tap output trans.	5.8	5.8
Output trans. sec.	Green lead spkr. skt.	Ground	6.0	6.0
Speaker field	Across green and red leads spkr. plug		5.6	5.6
Spkr. voice coil	Across green and black leads speaker		6.0	6.0
280 fil. sec.	Across fil. terms. 280 socket		6.0	6.0
245 and 224 fil. sec.	Across fil. terms. 245 socket		6.0	6.0
Pri. power trans.	Across AC line plug (switch on)		6.0	6.0
High voltage sec.	Across 280 plate terms.		5.8	5.8
L1 filter choke	Center tap output trans.	Upper term. input trans.	5.9	5.9
L3 filter choke	Center tap output trans.	280 fil. terms.	5.1	5.1



MODEL AC 80,81,90,
90-A, 91.

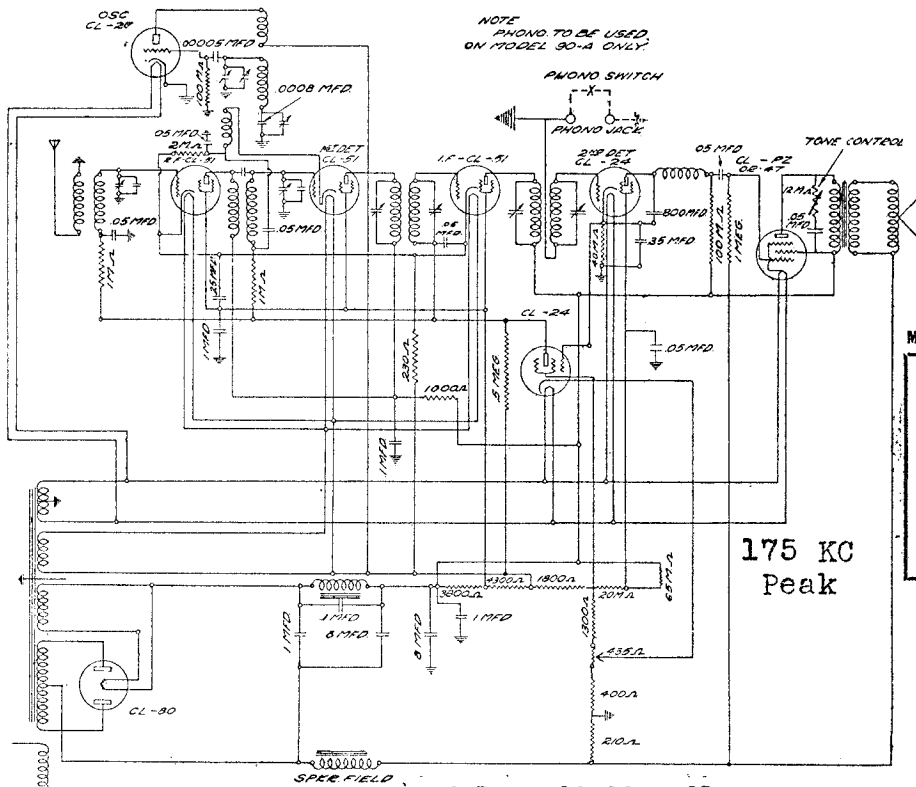
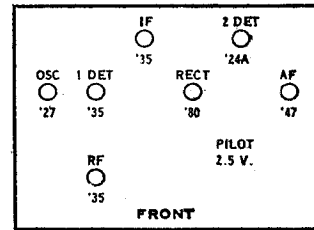
TRANSFORMER CORP. OF AMERICA

Schematic



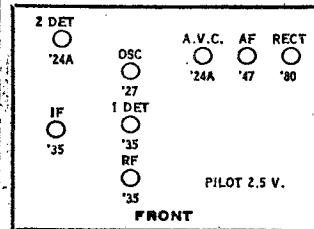
175 KC
Peak

Models AC-80, 25-80, AC-81, 25-81 (1931)



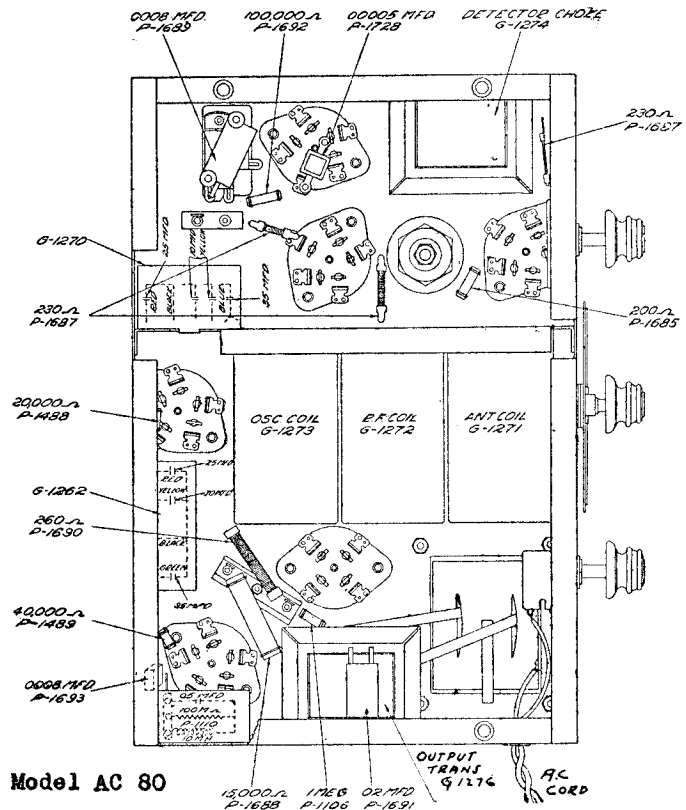
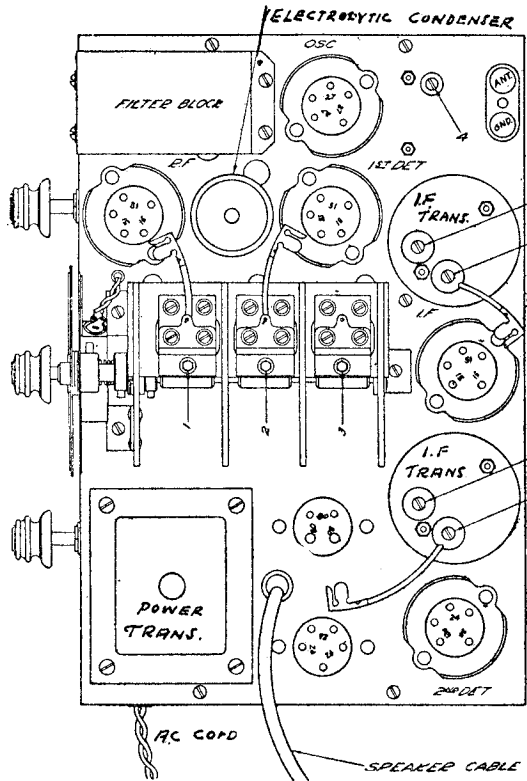
175 KC
Peak

Models AC-90, 25-90, AC-91, 25-91, AC-90A (1931)



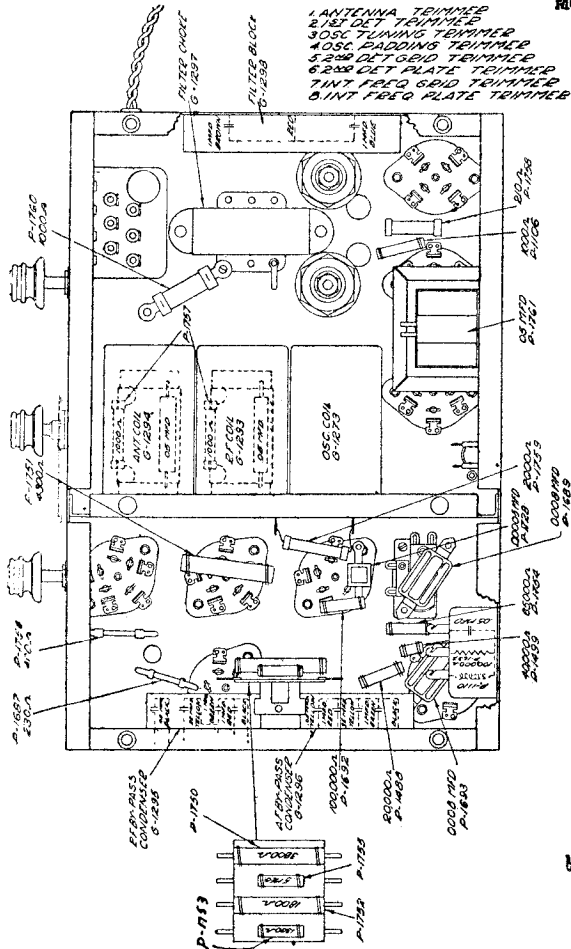
TRANSFORMER CORP. OF AMERICA

MODEL AC 80,81,90,
90-A,91
Chassis Views

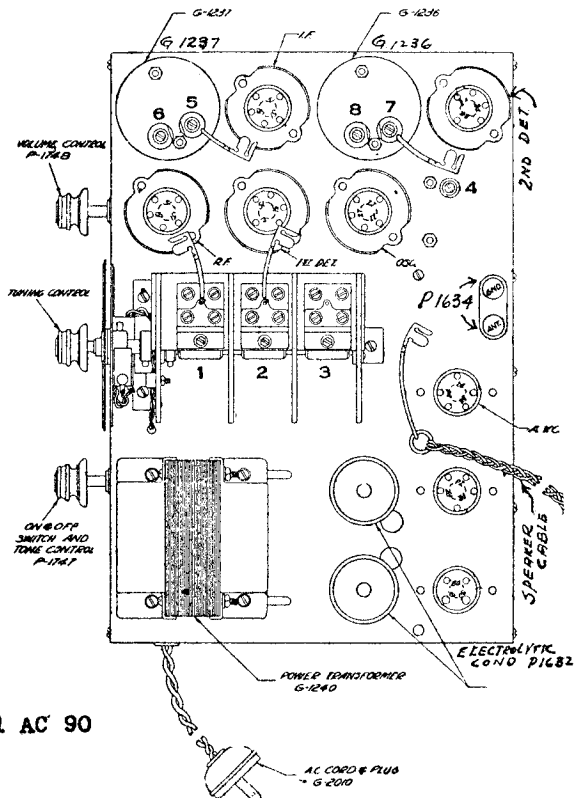


Model AC 80

NOTE
FOR MODEL 90A USE G-1231
IN PLACE OF G-1236, WHICH INCLUDES PHONO SWITCH
ALSO USE PIPES IN PLACE
OF P-1741Z

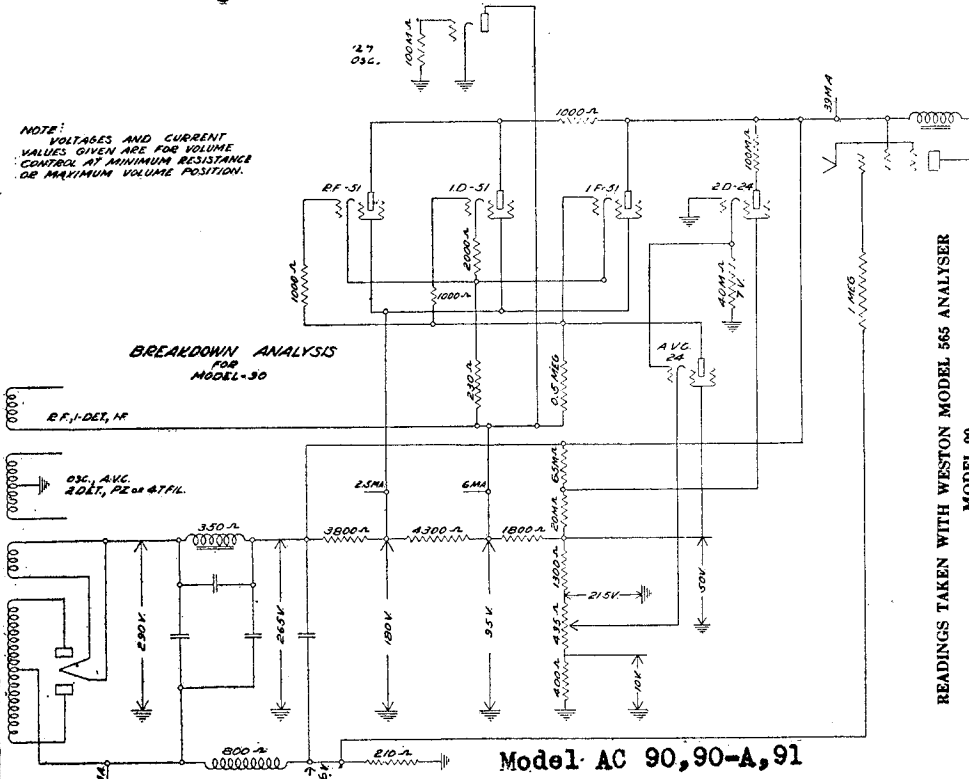


Model AC 90



MODEL AC 80,81,80,
90-A,91
Voltage
Breakdown Diagrams

TRANSFORMER CORP. OF AMERICA

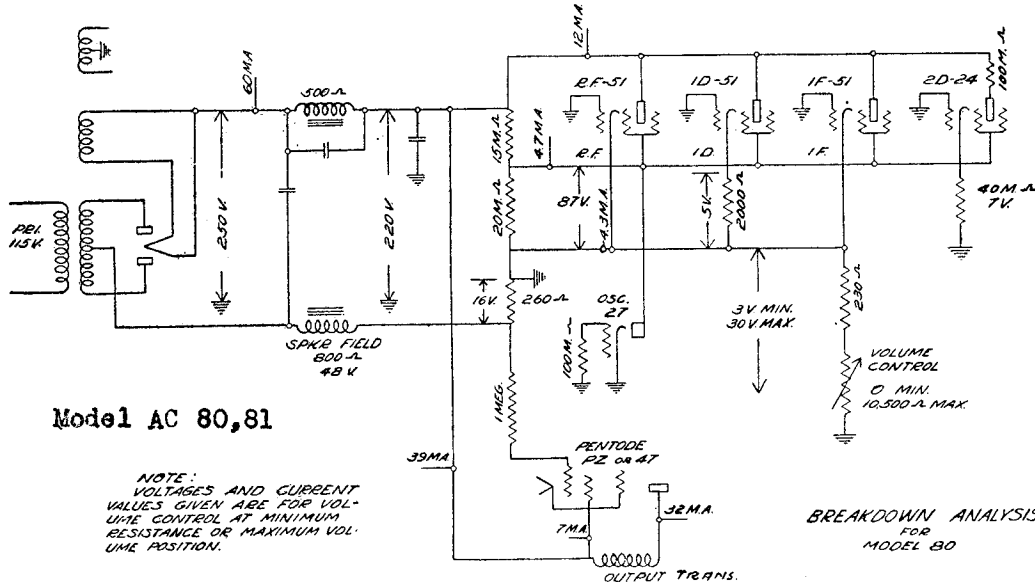


READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
MODEL 80

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p ' Norm.	SG Volts
1	r. f.	CL-51	2 2	233	3	3	5	66
2	1st Det.	CL-51	2 2	233	7	7	2.3	73
3	Osc.	CL-27	2 2	80	0	0	4	0
4	I.F.	CL-51	2 2	233	3	3	5	77
5	2nd det.	CL-24	2 2	162	6 2	7.2	5	73
6	Output	CL-PZ	2 2	238	15	0	27	233
7	Rect.	CL-80	4 8	300	0	0	50	0

Volume control position Full Line Voltage 115

Note: Since resistance tolerances in the sets are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%. CL-PZ is also known as CL-47, the latter being the final type number.



READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
MODEL 90

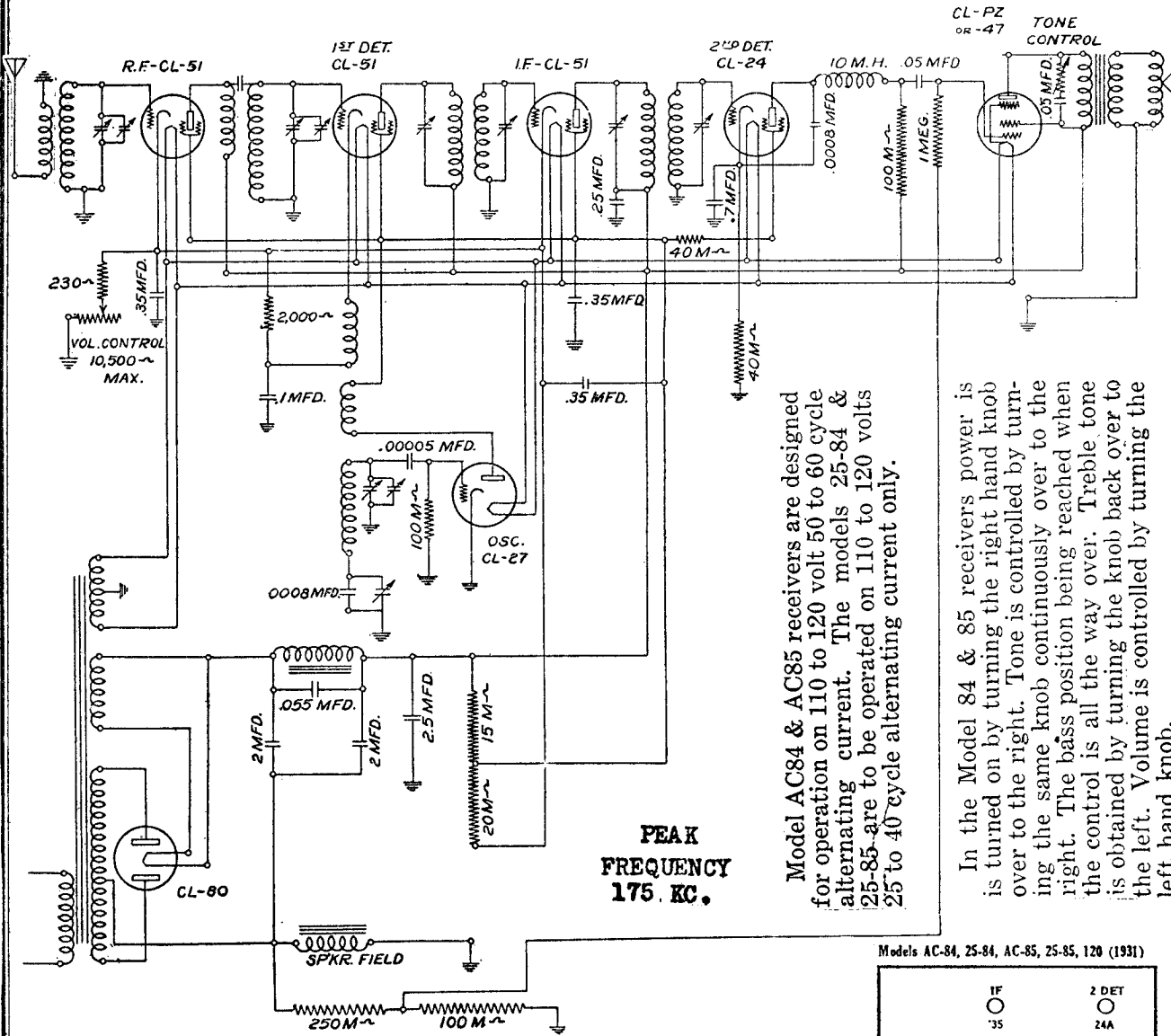
No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p ' Norm.	SG Volts
1	r. f.	CL-51	2 2	160	9	2 0	2 8	77
2	1st det.	CL-51	2 2	168	7 6	4 9	2 0	77
3	Osc.	CL-27	2 2	135	None	None	9 5	77
4	I.F.	CL-51	2 2	163	0 6	2 0	2 0	77
5	2nd det.	CL-24	2 2	178	6 8	9 0	25	90
6	A.V.C.	CL-24	2 2	25	4 6	4 5	None	40
7	A.F.	CL-PZ	2 2	260	16 5	36	36	280
8	Rect.	CL-80	4 6	350	72	72	72	72

Volume control position Full Line Voltage 115-90 cycles.

NOTE: Filaments and cathodes of R.F., I.F., and first detector are 95 volts positive with respect to ground on the model 90

TRANSFORMER CORP. OF AMERICA

MODEL AC84, 85
Schematic
Voltage

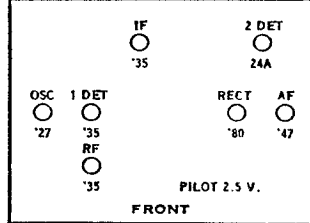


PEAK
FREQUENCY
175. KC.

Model AC84 & AC85 receivers are designed for operation on 110 to 120 volt 50 to 60 cycle alternating current. The models 25-84 & 25-85 are to be operated on 110 to 120 volts 25 to 40 cycle alternating current only.

In the Model 84 & 85 receivers power is turned on by turning the right hand knob over to the right. Tone is controlled by turning the same knob continuously over to the right. The bass position being reached when the control is all the way over. Treble tone is obtained by turning the knob back over to the left. Volume is controlled by turning the left hand knob.

Models AC-84, 25-84, AC-85, 25-85, 120 (1931)



READINGS TAKEN WITH WESTON MODEL 565 ANALYSER

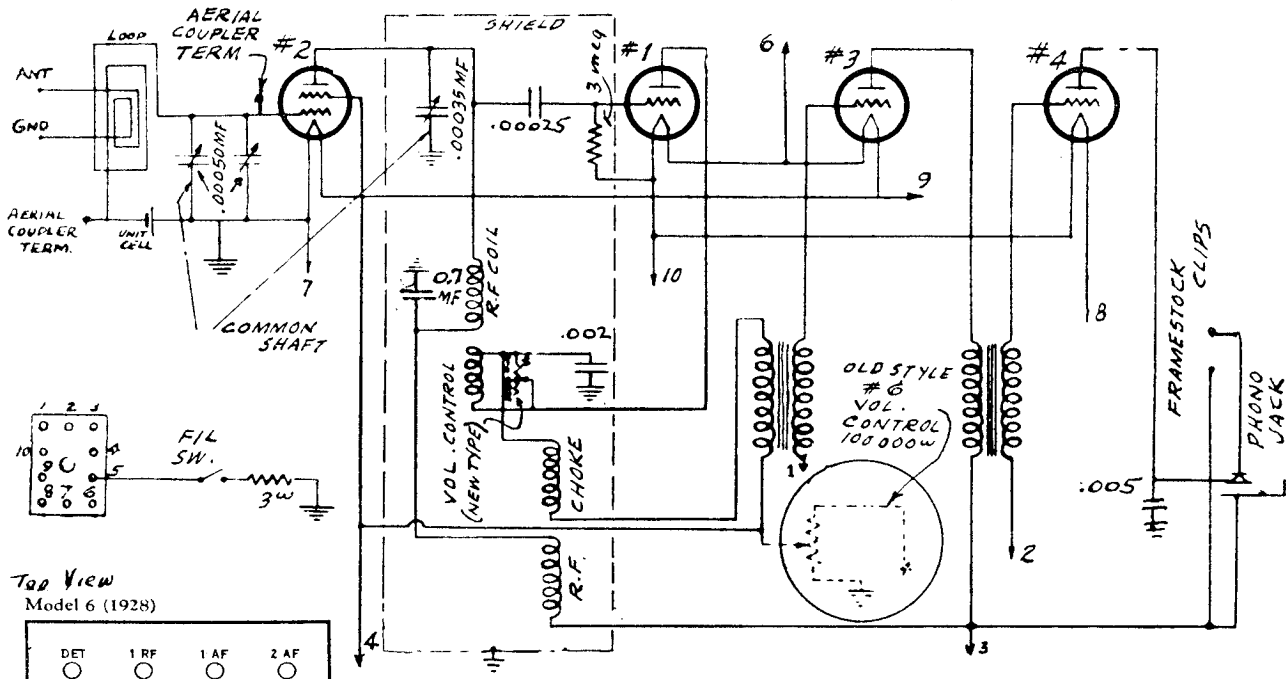
No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	SG Volts
1	r. f.	51	2.1	255	3.5	3.5	3.5	78
2	1st Det.	51	2.1	240	10.	10	2	108
3	Osc.	27	2.1	135	0	0	6.	0
4	I. F.	51	2.1	250	3.5	3.5	3.5	77
5	2nd det.	24	2.2	190	6.0	6.0	0.2	68
6	Output	47	2.2	228	14.	0	25	255
7	Rect.	80	4.4		0	0		0

Volume control position Full Line Voltage 115

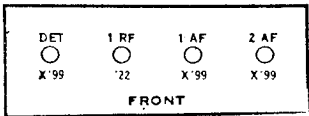
Note: Since resistance tolerances in the sets are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%.

MODEL 6,7

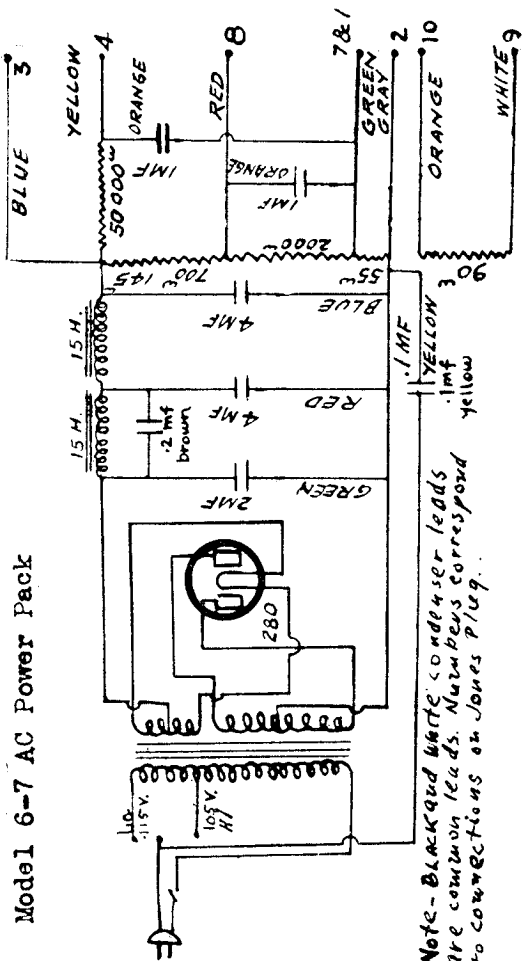
TRAV-LER RADIO & TELEVISION CORP.



Top View
Model 6 (1928)

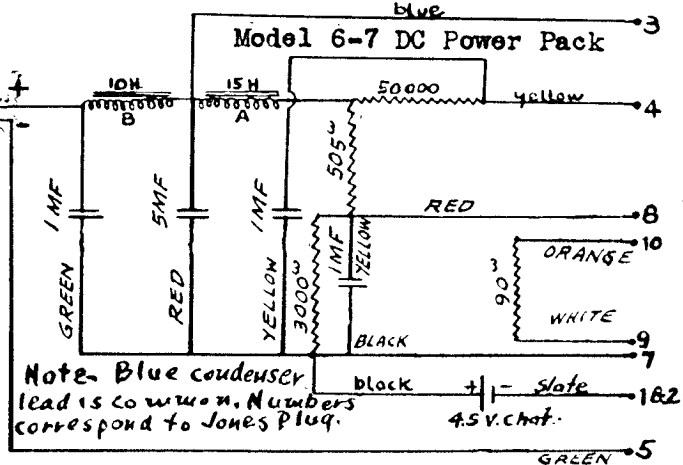


Model 6 - 7 Receiver Chassis

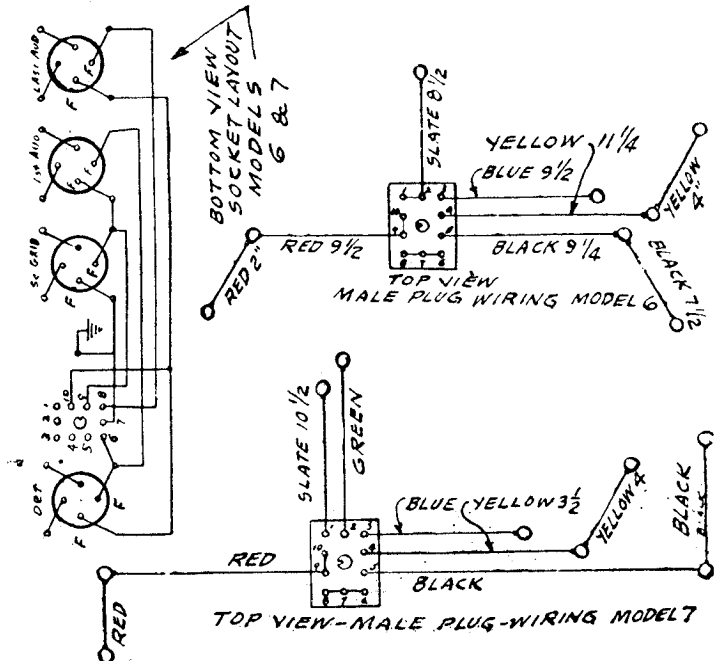


Model 6-7 AC Power Pack

Note - Black and white condenser leads are common leads. Numbers correspond to connections on Jones Plug.



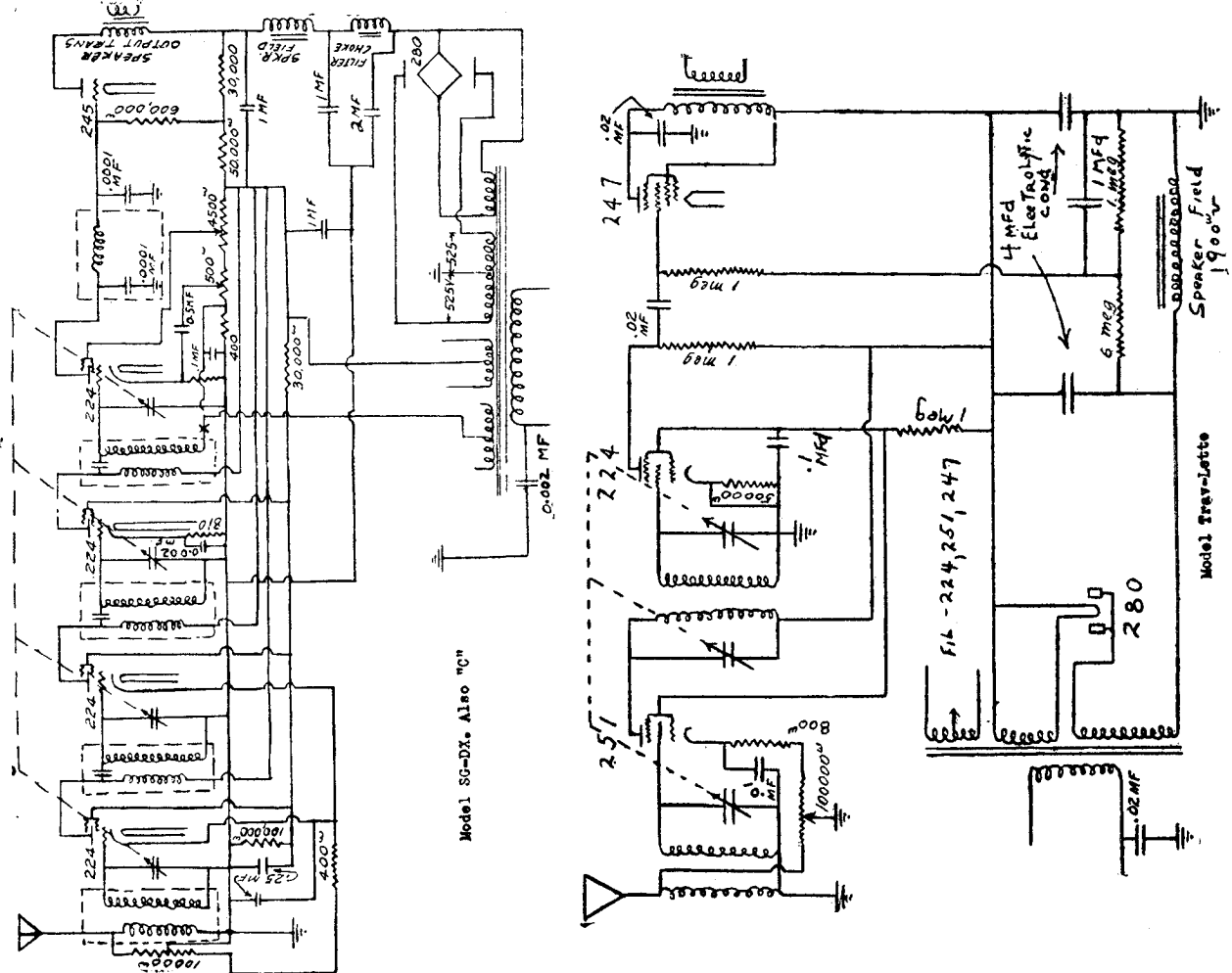
Note: Blue condenser lead is common. Numbers correspond to Jones Plug.



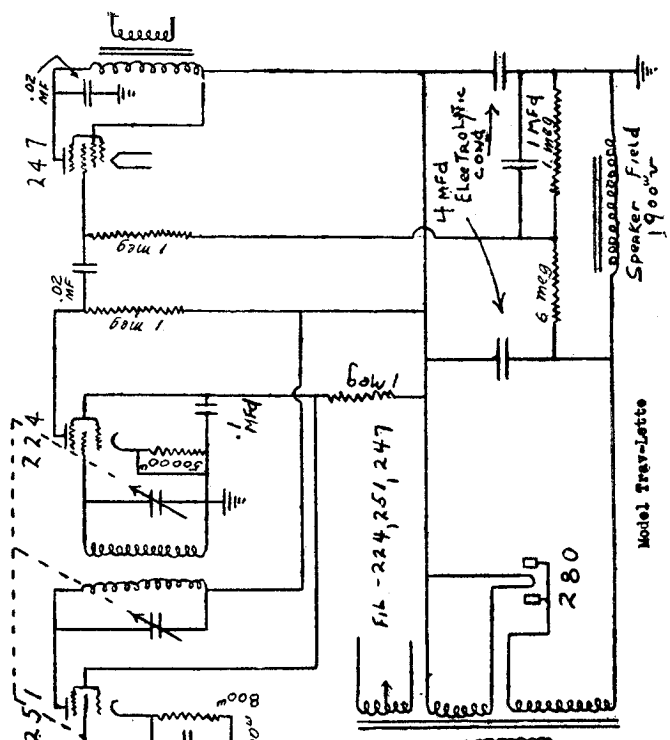
TOP VIEW - MALE PLUG - WIRING MODEL 7

MODEL SG-DX
MODEL "C"
MODEL "K"
MODEL Trav-Lette

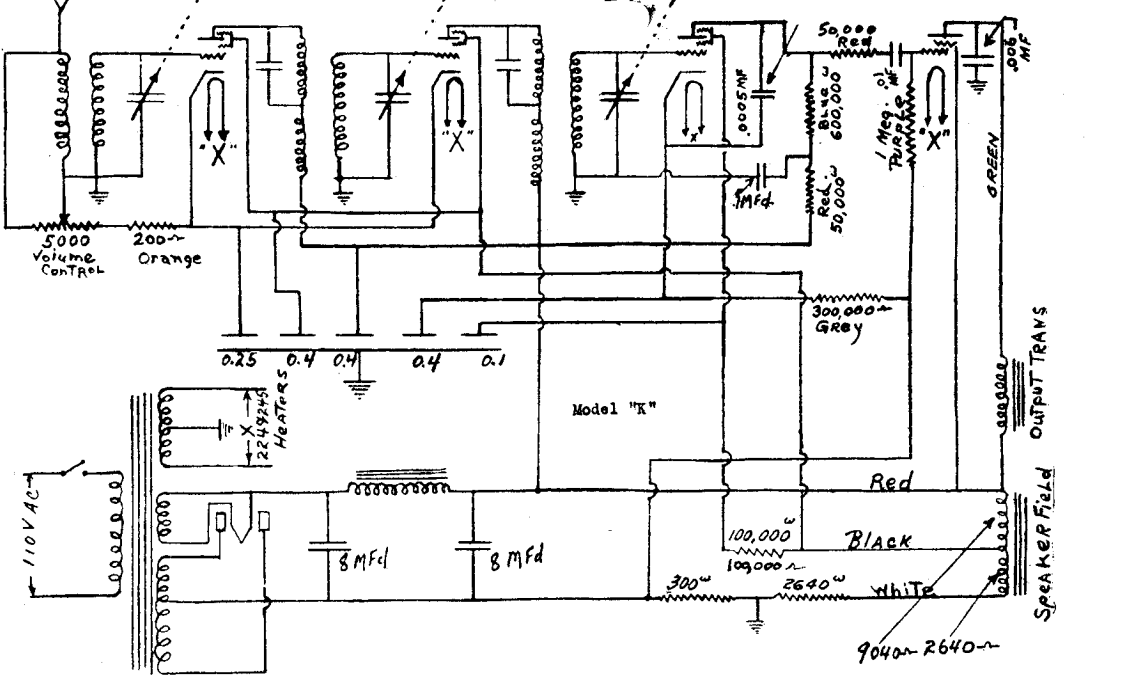
TRAV-LER RADIO & TELEVISION CORP.



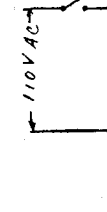
Model SG-DX. Also "C"



Model Trav-Lette



Model "K"



5000 Volume Control

200Ω Orange

Heaters 224Ω

9040~2640~

SPEAKER FIELD OUTPUT TRANS

Red
BLACK
White

1 Meg. 0.1 TURNTABLE

300,000 Grey

100,000 Black

10,000 White

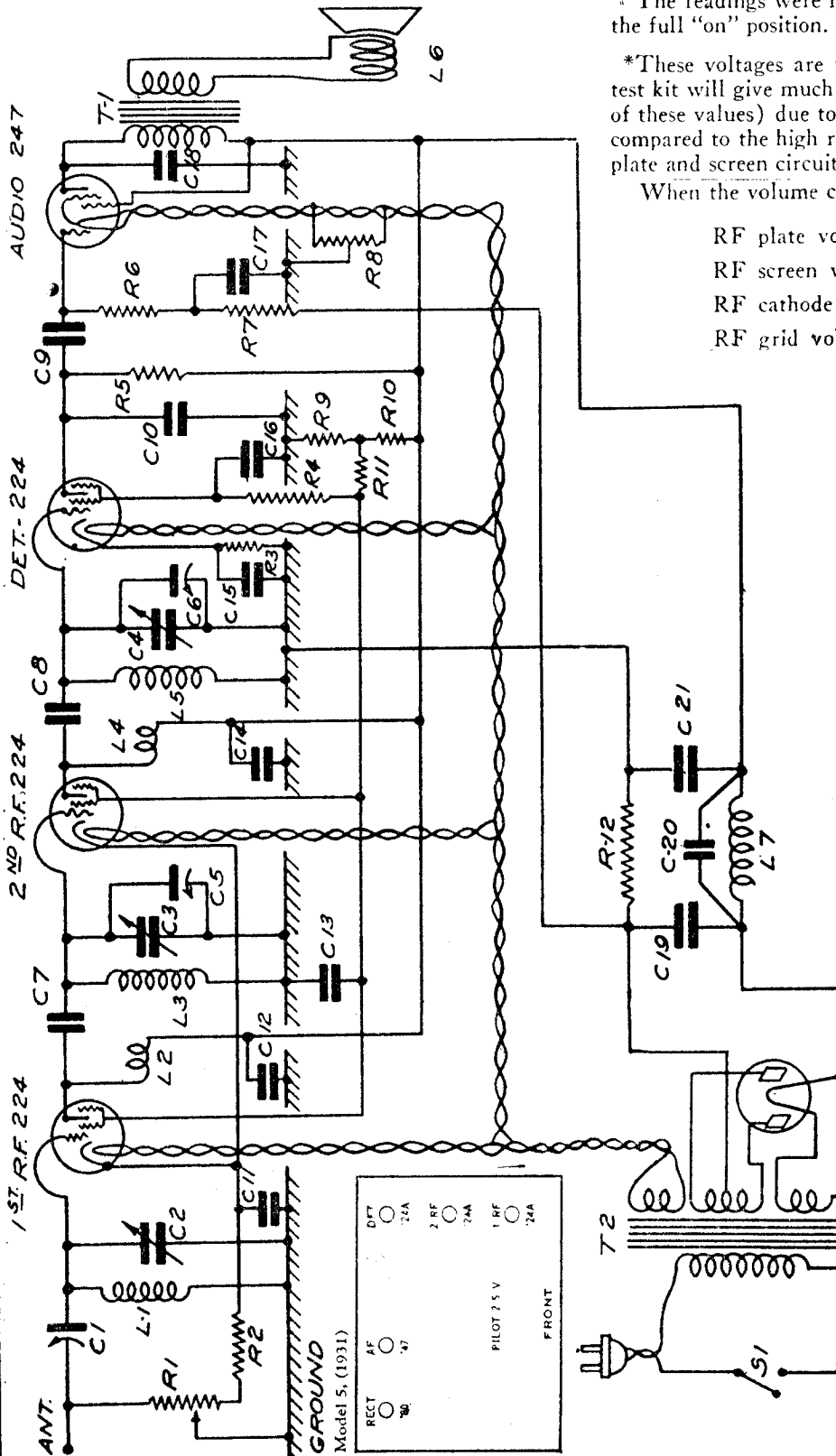
8MFD

8MFD

GREEN

MODEL 5 AC
Schematic
Voltage

UNITED AMERICAN BOSCH CORP.



* The readings were made with the volume control in the full "on" position.

*These voltages are the correct values. The average test kit will give much lower readings, (as low as 1/10 of these values) due to the low resistance of the meters compared to the high resistance included in the detector plate and screen circuits and the audio grid circuit.

When the volume control is reduced the

- RF plate voltage remains constant
- RF screen voltage increases
- RF cathode voltage increases
- RF grid voltage increases

SOCKET VOLTAGES

Stage	Tube	Fil.	Plate	Screen	Cathode	Grid	Plate MA
1st RF	224	2.3	250	90	2.5	2.5	4.5
2nd RF	224	2.3	250	90	2.5	2.5	4.5
Det.	224	2.3	*150	*20	3.0	1.5	.5
Audio	247	2.3	250	250	.....	*16	32
Rect.	280	4.8					

Plate current of each plate—20

UNITED AMERICAN BOSCH CORP.

MODEL 5 AC
Electrical
Values

NOMENCLATURE

- C 1—Antenna Trimmer Condenser
- C 2—Tuning Condenser
- C 3—Tuning Condenser
- C 4—Tuning Condenser
- C 5—Alignment Condenser
- C 6—Alignment Condenser
- C 7—Coupling Capacity
- C 8—Coupling Capacity
- C 9—Audio Coupling Condenser .006 mfd.
- C 10—Det. plate By-pass .0001 mfd.
- C 11—RF Cathode By-pass .05 mfd.
- C 12—RF Plate By-pass .05 mfd.
- C 13—RF Screen By-pass .25 mfd.
- C 14—RF Plate By-pass .05 mfd.
- C 15—Det. Cathode By-pass 1.00 mfd.
- C 16—Det. Screen By-pass .25 mfd.
- C 17—Audio Grid By-pass .01 mfd.
- C 18—Audio Plate By-pass .01 mfd.
- C 19—Filter Condenser 4. mfd.
- C 20—Field Condenser .08 mfd.
- C 21—Filter Condenser 4. mfd.
- R 1—Volume Control 10,000 ohms
- R 2—RF Cathode Resistor 300 ohms
- R 3—Det. Cathode Resistor 50,000 ohms
- R 4—Det. Screen Resistor 2 megohms
- R 5—Det. Plate Resistor 1 megohm
- R 6—Audio Grid Resistor $\frac{1}{2}$ megohm
- R 7—Audio Grid Resistor 100,000 ohms
- R 8—Mid Tap Resistor
- R 9—Divider Resistor 50,000 ohms
- R 10—Screen Resistor 50,000 ohms
- R 11—Screen Resistor 10,000 ohms
- R 12—Audio Bias Resistor 400 ohms
- L 1—Antenna Coil
- L 2—Primary } of RF Coil
- L 3—Secondary }
- L 4—Primary } of RF Coil
- L 5—Secondary }
- L 6—Speaker Moving Coil
- L 7—Speaker Field Coil
- T 1—Audio Output Transformer
- T 2—Power Transformer

Filter Condenser

The three leads from the main filter condenser are connected as follows:

- Black—to center tap of 280 plate winding.
- Green—to filament terminal of 280 socket.
- Red—to +B connection on terminal strip

By-pass Condenser Assembly

The condensers incorporated in this unit are identified as follows:

- 1.0 mfd. Green Leads
- .01 mfd. Green and White Leads
- .05 mfd. Black Leads
- .25 mfd. Red Leads

Resistors

- 300 ohms—Orange, Black, Brown
- 400 ohms—Yellow, Black, Brown
- 10,000 ohms—Blue, Yellow
- 50,000 ohms—Green, White
- 100,000 ohms—Blue, White
- $\frac{1}{2}$ megohm—Gray
- 1 megohm—Black
- 2 megohm—Black, White

Power Transformer

Six leads are brought out of the transformer winding on the side next to the terminal strip. Three are located on the opposite side. The transformer is connected as follows:

- Primary Winding—Stranded wires, terminal strip side
- 224 and 247 filaments—Heavy wires, terminal strip side
- 280 filament—Small wires, terminal strip side
- 280 plates—Two leads nearest front of set, opposite side
- 280 center tap—Lead nearest back of set, opposite side

The trimmer condenser mounted on the loud speaker must be adjusted for maximum volume.

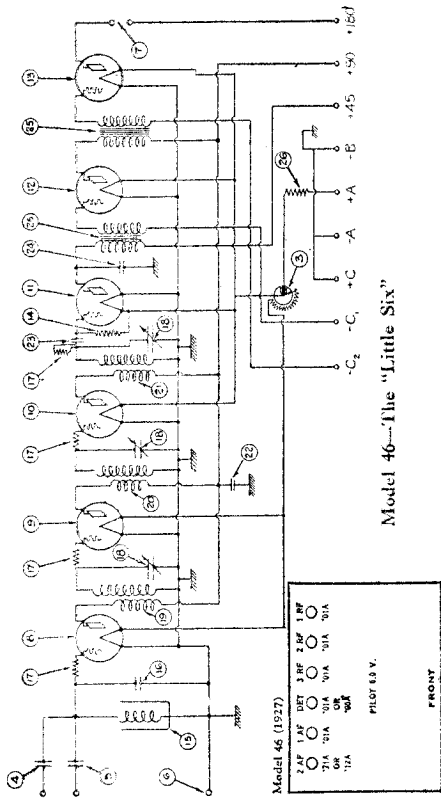
Some types of the 247 Pentode operate normally with a blue glow. This action does not, therefore, denote that the tube is defective due to gas.

It is very important that no tube is removed from its socket with the receiver "on" as to do this will damage the receiver or the Pentode tube.

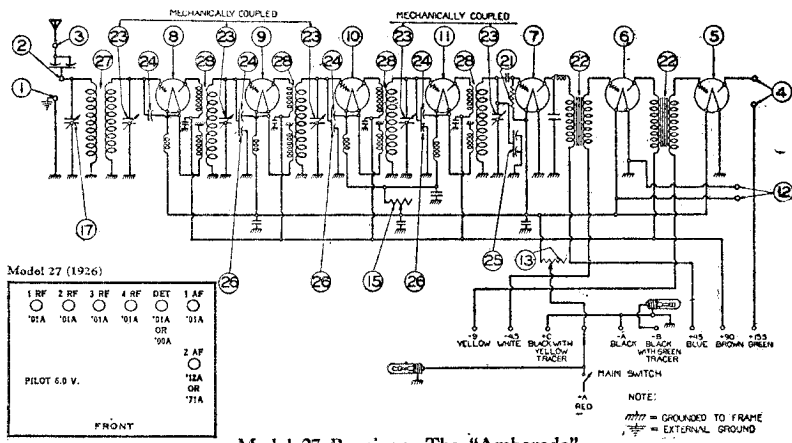
Make sure that the lead from the top of each 224 tube to the variable condenser follows closely along the metal partition between the tubes. Oscillation may occur if this lead lies too close to the tube itself.

MODEL 16
 MODEL 27
 MODEL 35
 MODEL 46

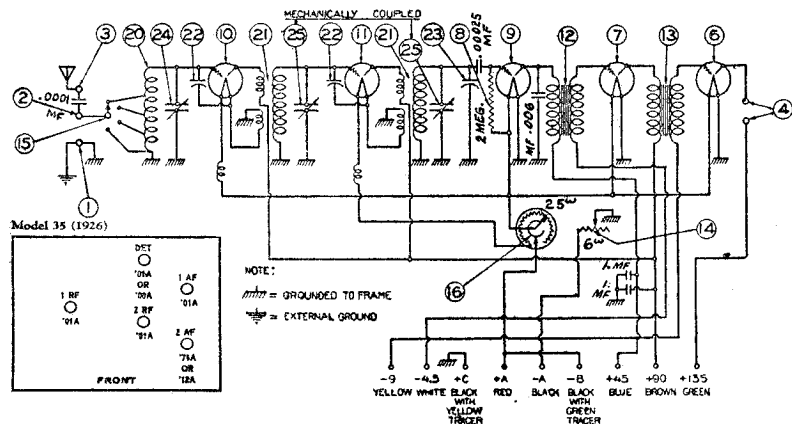
UNITED AMERICAN BOSCH CORP.



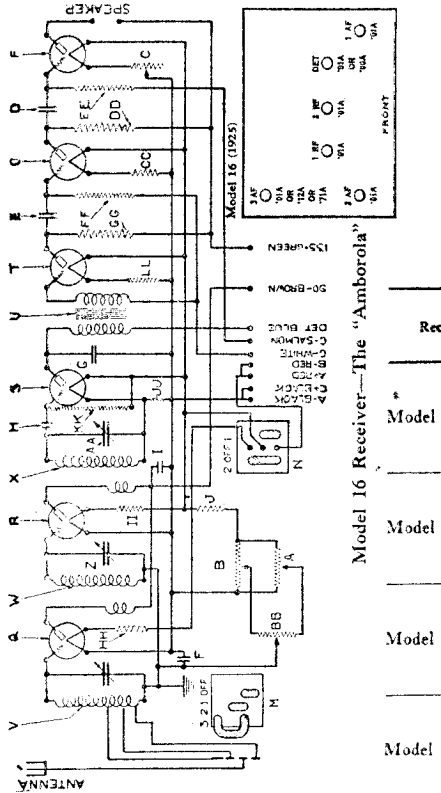
Model 46—The "Little Six"



Model 27 Receiver—The "Amborada"



Model 35—
 "Cruiser"
 "Royal Cruiser"
 "Imperial Cruiser"



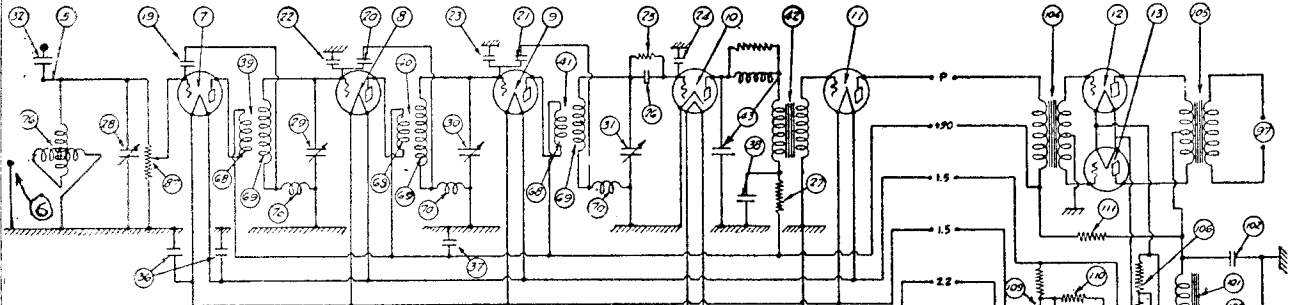
Model 16 Receiver—The "Amborola"

Table of Voltmeter Readings

Receiver	Circuit	Radio Frequency Stages				Detector Stage	Audio Stages		
		1	2	3	4		1	2	3
Model 16	Filament	5	5	—	—	5	5	5	5
	Plate	90	90	—	—	45	50	50	100
	Grid	2-4	2-4	—	—	0	1	Slight Movement of Needle	
Model 27	Filament	5	5	5	5	5	5	5	—
	Plate	90	90	90	90	45	80	100	—
	Grid	5	5	5	5	0	1	3	—
Model 35	Filament	5	5	—	—	5	5	5	—
	Plate	90	90	—	—	45	80	100	—
	Grid	5	5	—	—	0	1	3	—
Model 46	Filament	5	5	5	—	5	5	5	—
	Plate	90	90	90	—	45	80	100	—
	Grid	3	3	3	—	0	1	3	—

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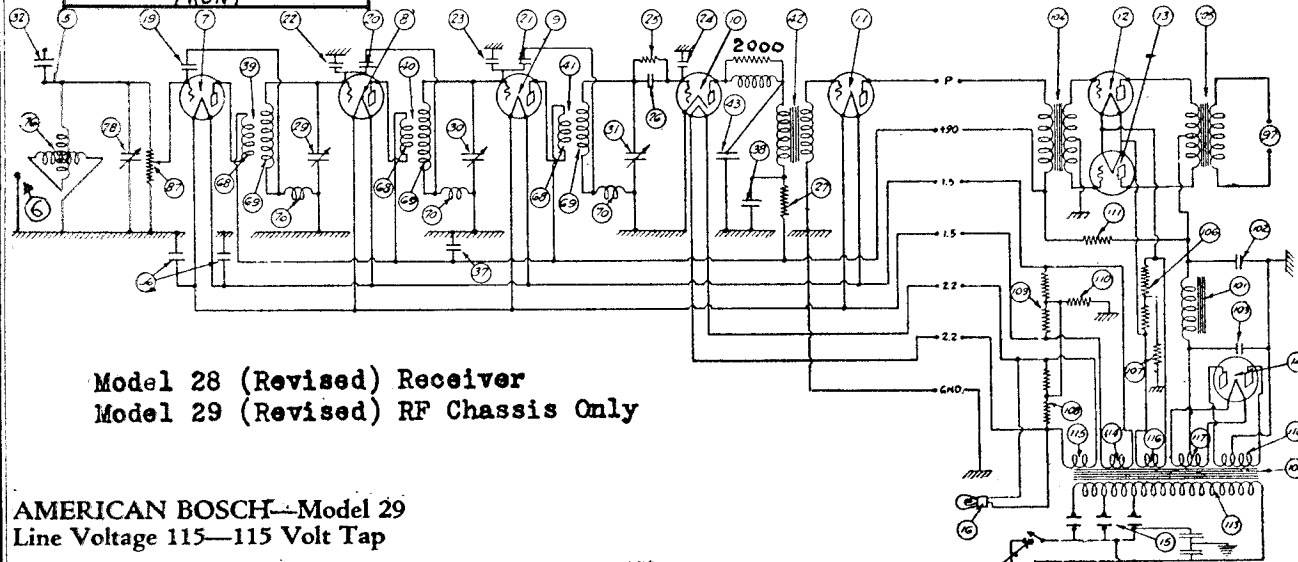
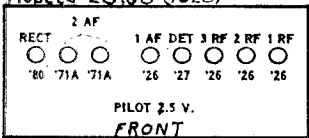
MODEL 28 AC
Two Types
MODEL 29 AC
RF Chassis



MODE Model 38 is Model 28 for 25 cycle

Model 28 Receiver
Model 29 RF Chassis Only

- 25—Grid Leak 3 megohms
- 26—Grid Condenser .00025 mfd.
- 27—Plate Resistor 50,000 ohms
- 32—External Cond. .00015 mfd.
- 36—By-Pass Condensers .5 mfd.
- 37—By-Pass Condenser 1. mfd.
- 38—By-Pass Condenser 1. mfd.
- 43—By-Pass Condenser .002 mfd.
- 87—Volume Control 500,000 ohms
- 102—Filter Condenser 2 mfd.
- 103—Filter Condenser 4 mfd.
- 107—Bias Resistor 1500 ohms
- 110—Bias Resistor 300 ohms
- 111—"B" Resistor 5000 ohms



Model 28 (Revised) Receiver
Model 29 (Revised) RF Chassis Only

AMERICAN BOSCH—Model 29
Line Voltage 115—115 Volt Tap

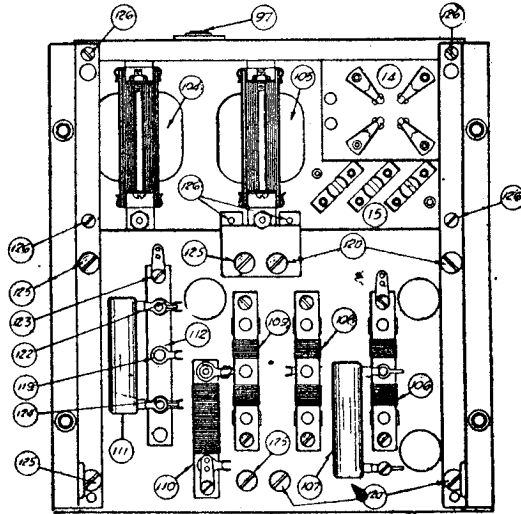
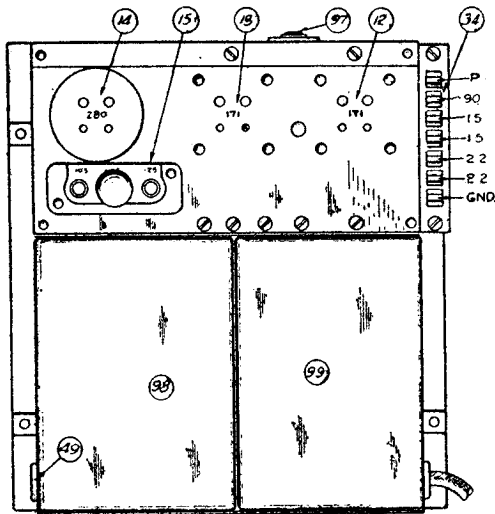
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET. ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	226	1st. R.F.	1.3	100	7	—	4	10	6	—	—	—
2	226	2nd. R.F.	1.3	100	7	—	4	10	6	—	—	—
3	226	3rd. R.F.	1.3	100	7	—	4	10	6	—	—	—
4	227	Detector	2.3	45	—	—	2	2	0.0	—	—	—
5	226	1st. A.F.	1.3	100	7	—	3	6.5	3.5	—	—	—
6	210	2nd. A.F.	7.3	400	30	—	20	23	3	—	—	—
7	281	Rectifier	7.3	—	—	—	28	—	—	—	—	—
8	281	Rectifier	7.3	—	—	—	28	—	—	—	—	—

AMERICAN BOSCH—Model 28
Line Voltage 115—115 Volt Tap

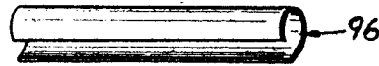
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. RF, DET., ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	SH. VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	226	1st. R.F.	1.3	100	7	—	4	10	6	—	—	—
2	226	2nd. R.F.	1.3	100	7	—	4	10	6	—	—	—
3	226	3rd. R.F.	1.3	100	7	—	4	10	6	—	—	—
4	227	Detector	2.3	45	—	—	2	2	0.0	—	—	—
5	226	1st. A.F.	1.3	100	7	—	3	6.5	3.5	—	—	—
6	171	2nd. A.F.	5.0	150	35	—	10	14	4	—	—	—
7	171	2nd. A.F.	5.0	150	35	—	10	14	4	—	—	—
8	280	Rectifier	5.0	—	—	—	18	—	—	—	—	—

MODEL 28
Power Pack
Chassis - Data

UNITED AMERICAN BOSCH CORP.



Model 28 Power Pack. Top and Bottom View



POWER TRANSFORMER

The power transformer "100" is enclosed in the transformer can "98." Since the transformer is completely sealed, it is necessary to replace the entire unit.

The transformer has a single primary winding and five secondary windings, two of which have center taps. The colors of these leads, together with their points of attachment to the resistors and other parts, are given in the following paragraphs.

1.5 Volt Winding "114": Supplies filament current for RF and 1st AF tubes (7, 8, 9, 11). The two leads from this winding are *red* and connect to the two end terminals of resistor "109."

2.2 Volt Winding "115": Supplies filament current for the detector tube and dial lamp (10 and 16). The two leads from this winding are *black* and connect to the two end terminals of resistor "108."

5 Volt Winding "116": Supplies filament current for the two push-pull stages (11 and 12). The two leads from this winding are *blue* and connect to the two end terminals of resistor "106."

Single Brown Lead (Primary Lead) Cotton Covered: To one of the main switch "17" leads.

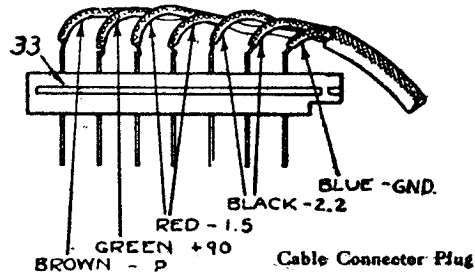
Twisted Leads (Primary Taps): Black with red tracer—to tap switch (15), "105" tap. Black—to tap switch (15), "115" tap. Black with yellow tracer—to tap switch (15), "125" tap.

Brown Twisted Leads (Plate Winding "118"): To plate contacts (small holes) of socket "14."

Brown Cable (Filament Winding "117"): To filament contacts (large holes) of socket "14."

Single Black Lead: To terminal "119" of strip "112." This lead is the center tap of rectifier filament winding "117."

Single Green Lead: To ground connection. This lead is the center tap of the rectifier plate winding "118."



FILTER CAN

The Filter Can "99" contains the two filter condensers "102" and "103," and the filter choke coil "101." These three units are sealed in the can, making it necessary to replace the entire filter can if any of these units become defective.

There are five leads from the filter can, connected as follows:

Black Fabric Covered Wires: These leads come from the choke coil "101" and connect to terminals "119" and "122" of terminal strip "112." These two leads are interchangeable.

Black Lead: This lead comes from filter condenser "103" and connects to terminal "119."

Blue Lead: This lead comes from filter condensers "102" and "103" and connects to ground terminal "123."

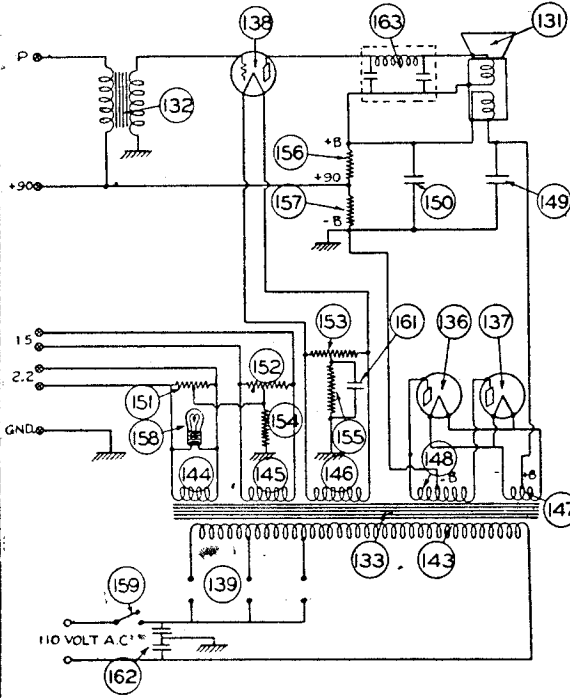
Red Lead: This lead comes from filter condenser "102" and connects to terminal "122."

Filter Can Replacement

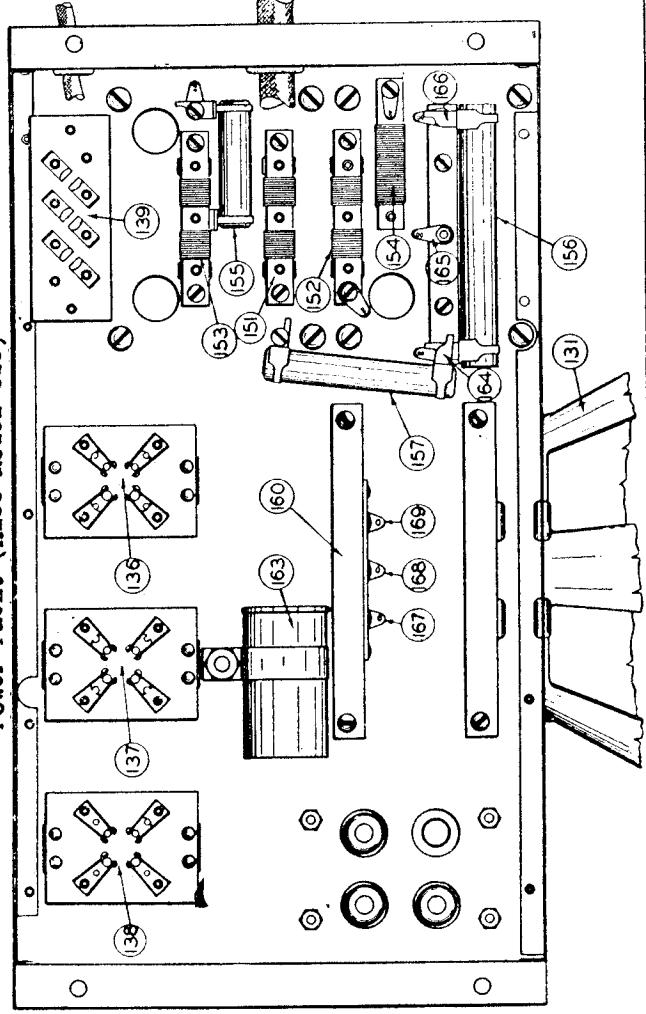
1. Unsolder the five leads of the filter can at their point of connection to the terminal strips.
2. Remove the 4 holding screws "125."
3. Mount the new can in place.
4. Connect the wires as indicated in the preceding paragraph.

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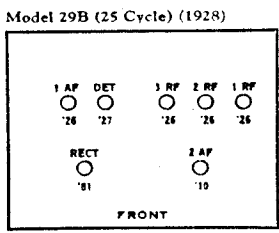
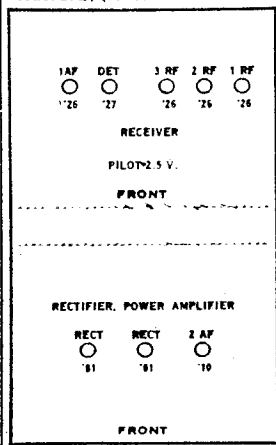
MODEL 29 AC, 825
Power Pack
Chassis - Schematic



Bottom View of Model 29 Dynamic Power Pack. (Also Model 825)



Model 825 Super Dynamic Power Pack. Used with Model 28 Chassis only to form Model 29 Receiver. Model 29B, (1928)



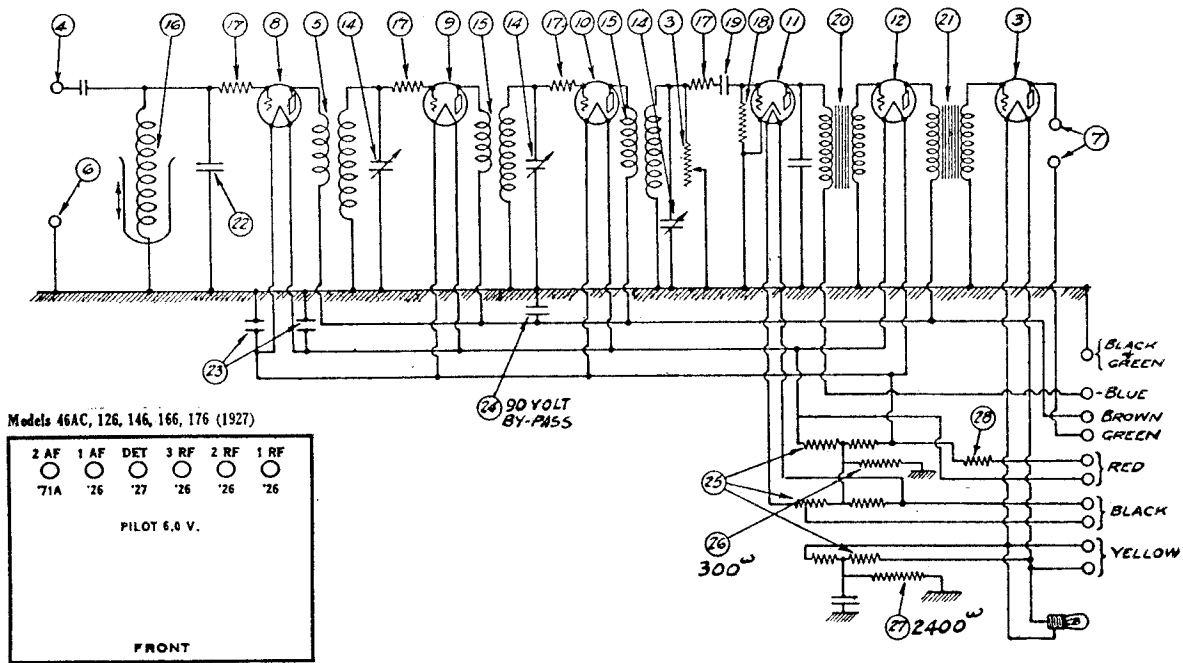
MODEL 825 POWER PACK

- 157—Plate Resistor 10,000 ohms
- 149—Filter Condenser 4 mfd.
- 161—By-Pass Condenser 1. mfd.
- 150—Filter Condenser 2 mfd.
- 162—Buffer Condensers
- 154—Bias Resistor 500 ohms
- 163—Filter
- 155—Bias Resistor 2000 ohms
- 156—Plate Resistor 10,000 ohms

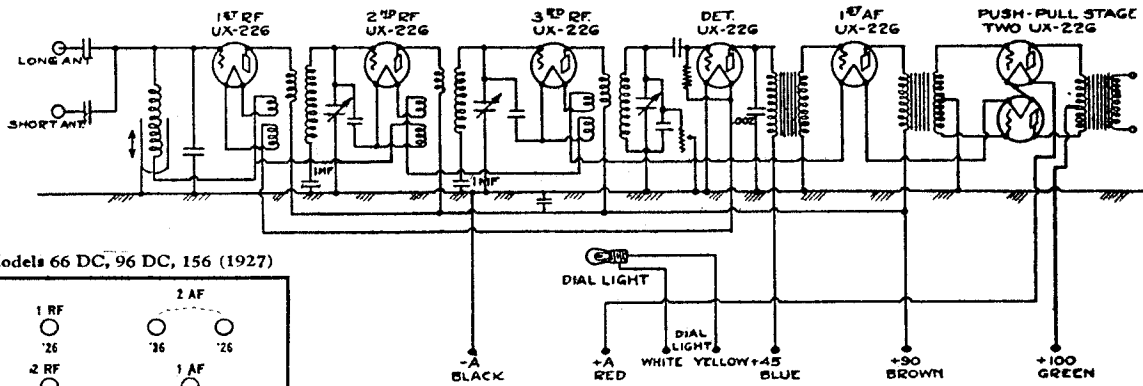
	CHASSIS					MODEL 28		MODEL 29
	1 AF.	DET	3 RF	2 RF	1 RF	PUSH-PULL		POWER
A Volts	1.3	2.3	1.3	1.3	1.3	5	5	7.5
B Volts	100	45	100	100	100	150	150	400
C Volts	7	—	7	7	7	35	35	30
Plate M. A.	3	2	4	4	4	10	10	20
Tube Test	—	—	10	10	10	35	35	—

MODEL AC 46,126,146,
166,176
MODEL DC 96,156

UNITED AMERICAN BOSCH CORP.



Models 126, 146, 166, 176, 46AC (AC operation)



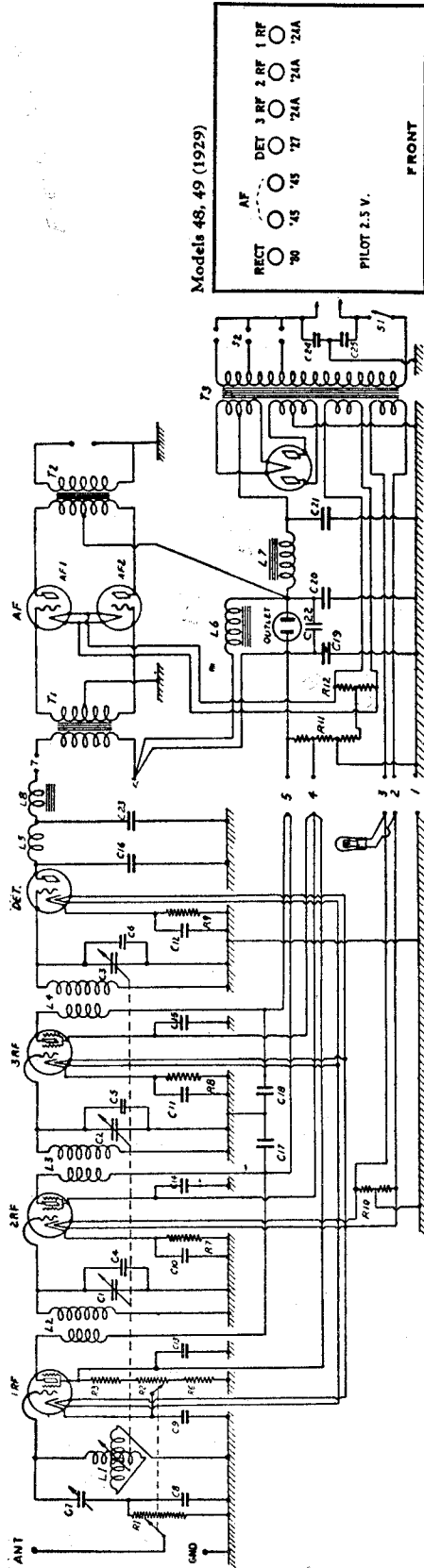
Model 96DC 110 Volt "Cruiser"

Model 156 Receiver "Cruiser"

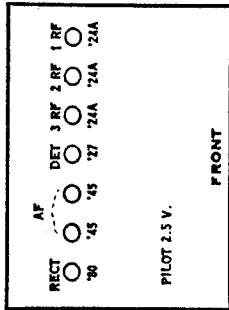
Receiver	Circuit	Radio Frequency Stage				Det. Stage	Audio Stages		
		1	2	3	4		1	2	3
96 DC 110V	Filament	1.4	1.4	1.4	—	1.4	1.4	Push Pull Stage	
66 DC 110V	Plate	95	100	95	—	45	80	75	75
156	Grid	—0.2	0.2	1.8	—	0	1.2	2.2	2.2
126, 146, 166, 176 (Little Six AC Chassis)	Filament	*1.4	*1.4	*1.4	—	*2.3	*1.4	*5	—
	Plate	90	90	90	—	45	70	130	—
	Grid	3	3	3	—	0	1	8 to 9	—

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MODEL 48,49 AC Schematic, Voltage



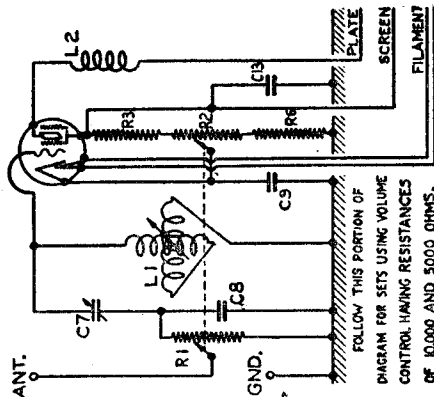
Models 48, 49 (1929)



Model 48 Receiver (Model 49 for 25 Cycle Operation)

- T1—Antenna Tuning Condenser
- C8—Antenna Condenser .001 mid.
- C9—1st RF Cathode By-Pass Condenser .5 mid.
- C10—2nd RF Cathode By-Pass Condenser .5 mid.
- C11—3rd RF Cathode By-Pass Condenser .5 mid.
- C12—Detector Cathode By-Pass Condenser 1 mid.
- C13—1st RF Screen By-Pass Condenser .5 mid.
- C14—2nd RF Screen By-Pass Condenser .5 mid.
- C15—3rd RF Screen By-Pass Condenser .5 mid.
- C16—Detector Plate By-Pass Condenser .001 mid.
- C17—1st and 2nd RF Plate By-Pass Condenser .5 mid.
- C18—3rd RF Plate By-Pass Condenser .5 mid.
- C19—Filter Condenser 1 mid.
- C20—Filter Condenser 2 mid.
- C21—Filter Condenser 4 mid.
- C22—By-Pass Condenser 160 cycles .05 mid.
- C23—Detector Plate By-Pass Condenser .001 mfd

- T1—Audio Input Transformer
- T2—Audio Output Transformer
- T3—Power Transformer
- R1—Volume Control {10,000} ohms (Antenna)
- R2—Volume Control {5,000} ohms
- R3—1st RF Screen Resistor 25,000 ohms
- R4—2nd RF Grid Resistor 500 ohms
- R5—3rd RF Grid Resistor 500 ohms
- R6—1st RF Bias Resistor 1500 ohms
- R7—2nd RF Bias Resistor 1500 ohms
- R8—3rd RF Bias Resistor 1500 ohms
- R9—Detector Bias Resistor 15,000 ohms
- R10—RF Center Tap Resistor
- R11—Voltage Divider Resistor
- R12—Audio Center Tap Resistor



FOLLOW THIS PORTION OF DIAGRAM FOR SETS USING VOLUME CONTROL HAVING RESISTANCES OF 10,000 AND 5000 OHMS.

BOSCH—Model 49-25 Cycle Line Voltage 112—Volume Control Position Full On

BOSCH—Model 48-60 Cycle Line Voltage 112—Volume Control Position Full On

TUBE ORDER IN SET	TUBE TYPE	POSITION	TUBE OUT		TUBE IN TESTER		MEASURED PLUG IN SOCKET OF SET	
			VOLTS	MA	CATHODE VOLTS	NORMAL PLATE VOLTS	CATHODE VOLTS	NORMAL PLATE VOLTS
1	224	1st RF	2.4	1.75	2.5	2.5	2.5	3.5
2	224	2nd RF	2.4	1.75	2.5	2.5	2.5	3.5
3	224	3rd RF	2.4	1.75	2.5	2.5	2.5	3.5
4	227	DET.	2.4	1.75	2.5	2.5	2.5	3.5
5	245	AUD.	2.4	2.50	4.5	30	50	80
6	245	AUD.	2.4	2.50	4.5	30	50	80
7	280	Rect.	4.6	-	-	100	-	-

TUBE ORDER IN SET	TUBE TYPE	POSITION	TUBE OUT		TUBE IN TESTER		MEASURED PLUG IN SOCKET OF SET	
			VOLTS	MA	CATHODE VOLTS	NORMAL PLATE VOLTS	CATHODE VOLTS	NORMAL PLATE VOLTS
1	224	1st RF	2.4	1.75	2.5	2.5	2.5	3.5
2	224	2nd RF	2.4	1.75	2.5	2.5	2.5	3.5
3	224	3rd RF	2.4	1.75	2.5	2.5	2.5	3.5
4	227	DET.	2.4	1.75	2.5	2.5	2.5	3.5
5	245	AUD.	2.4	2.50	4.5	30	50	80
6	245	AUD.	2.4	2.50	4.5	30	50	80
7	280	Rect.	4.6	-	-	100	-	-

MODEL 48, 49 AC
Chassis Views

UNITED AMERICAN BOSCH CORP.

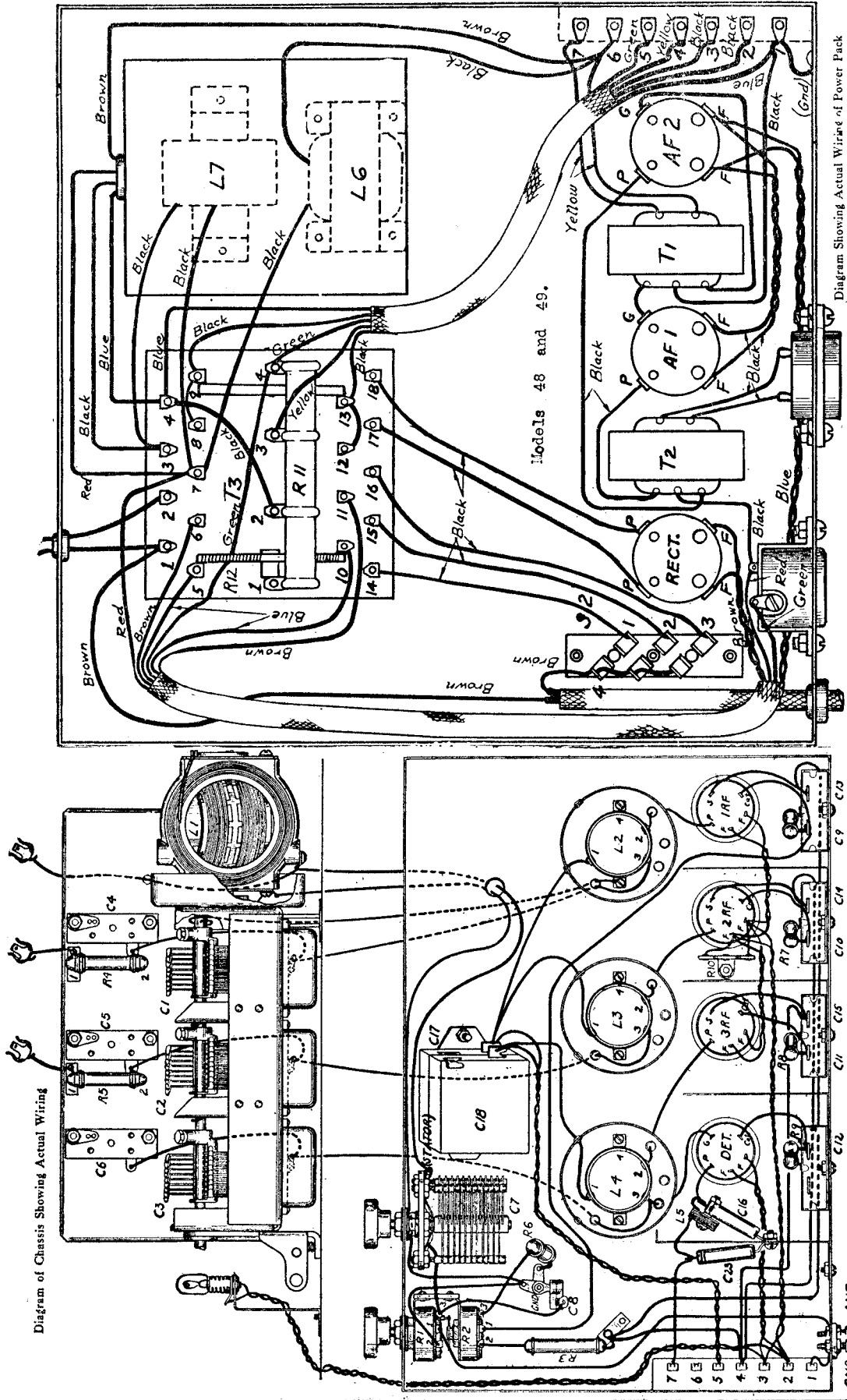


Diagram Showing Actual Wiring of Power Pack

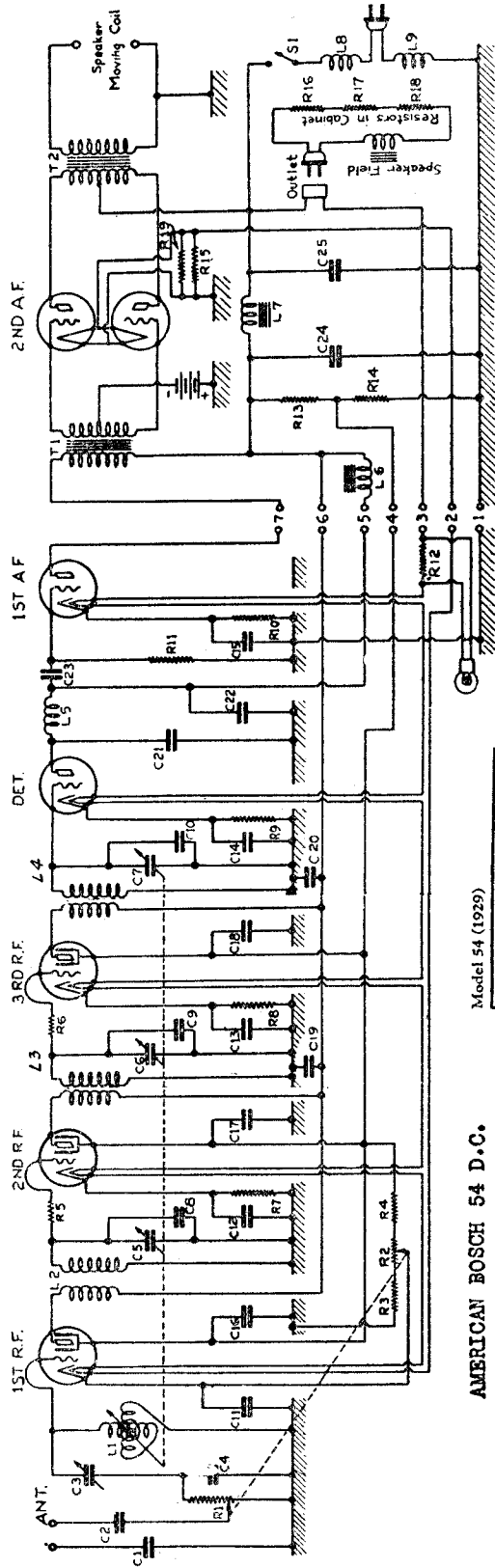
Models 48 and 49.

Diagram of Chassis Showing Actual Wiring

Note: This diagram applies to sets having dual volume control of 10,000 and 5,000 ohms.

UNITED AMERICAN BOSCH CORP.

MODEL 54 DC
Schematic
Voltage



Model 54 (1929)

AMERICAN BOSCH 54 D.C.

Variometer: Variometer tuning of the first radio frequency stage is employed, thus assuring equal sensitivity on both high and low wave lengths. The variometer (shown at L1 on the schematic wiring diagram) is geared directly to the condenser gang and needs no separate control. Correct operation on any length of antenna is provided by the trimming condenser C3, which is operated by the "Clarifier" control.

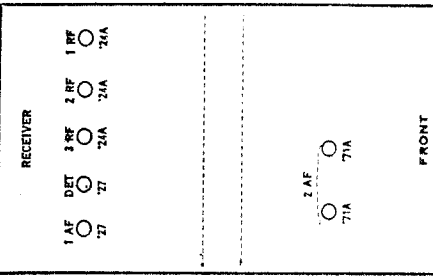
Volume Control: The Volume Control is also located in the first radio frequency stage and consists of two resistance units operated by a single shaft. One resistance is used as a potentiometer in the antenna circuit and the other as a potentiometer to vary the grid voltage of the 1st RF tube. This type of control gives smooth variation in volume on either distant or local stations and at the same time maintains the exceptional quality of reproduction.

Reference to the schematic diagram will show that the entire radio frequency amplifier is properly designed and by-passed. Thorough shielding has been applied to the entire receiver to utilize the large gain of which the screen grid tubes are capable, and to eliminate the slightest possibility of oscillation.

- C12—2nd R. F. cathode by-pass condenser 5 mfd.
- C13—3rd R. F. cathode by-pass condenser 5 mfd.
- C14—Detector cathode by-pass condenser 1. mfd.
- C15—1st A. F. cathode by-pass condenser 1. mfd.
- C16—1st R. F. screen by-pass condenser 5 mfd.
- C17—2nd R. F. screen by-pass condenser 5 mfd.
- C18—3rd R. F. screen by-pass condenser 5 mfd.
- C19—Plate by-pass condenser 5 mfd.
- C20—Detector plate by-pass condenser .001 mfd.
- C21—Voltage divider by-pass condenser .001 mfd.
- C22—1st A. F. tuning condenser .001 mfd.
- C23—1st A. F. tuning condenser .005 mfd.
- C24—Filter condenser 4 mfd.
- C25—Filter condenser 4 mfd.

- R 1—Volume control 5000 ohms
- R 2—Volume control 3000 ohms
- R 3—Screen resistor 500 ohms
- R 4—Screen resistor 2000 ohms
- R 5—2nd R. F. grid resistor 250 ohms
- R 6—3rd R. F. grid resistor 250 ohms
- R 7—2nd R. F. bias resistor 1500 ohms
- R 8—1st A. F. bias resistor 1500 ohms
- R 9—Detector bias resistor 40000 ohms
- R 10—1st A. F. bias resistor 1500 ohms
- R 11—1st A. F. grid resistor 1 megohm
- R 12—Dial light resistor 25 ohms
- R 13—Voltage divider resistor 25000 ohms
- R 14—Voltage divider resistor 15000 ohms
- R 15—2nd A. F. filament resistor 5 ohms
- R 16—Filament resistor 20 ohms
- R 17—Filament resistor 20 ohms
- R 18—Filament resistor 20 ohms
- R 19—2nd A. F. filament resistor 22 ohms

- L 1—Variometer
- L 2—2nd R. F. coil
- L 3—3rd R. F. coil
- L 4—Detector coil
- L 5—Detector linkage coil
- L 6—Detector filter choke
- L 7—Main filter choke
- L 8—Line filter choke
- L 9—Line filter choke
- T 1—Ground condenser .005
- T 2—Antenna condenser .001
- C 2—Trimming condenser .0025 mfd
- C 4—Antenna condenser .0025 mfd
- C 7—1st R. F. tuning condenser
- C 8—2nd R. F. tuning condenser
- C 9—3rd R. F. tuning condenser
- C 10—Detector tuning condenser
- C 11—1st A. F. alignment condenser
- C 12—1st R. F. cathode by pass condenser 5 mfd

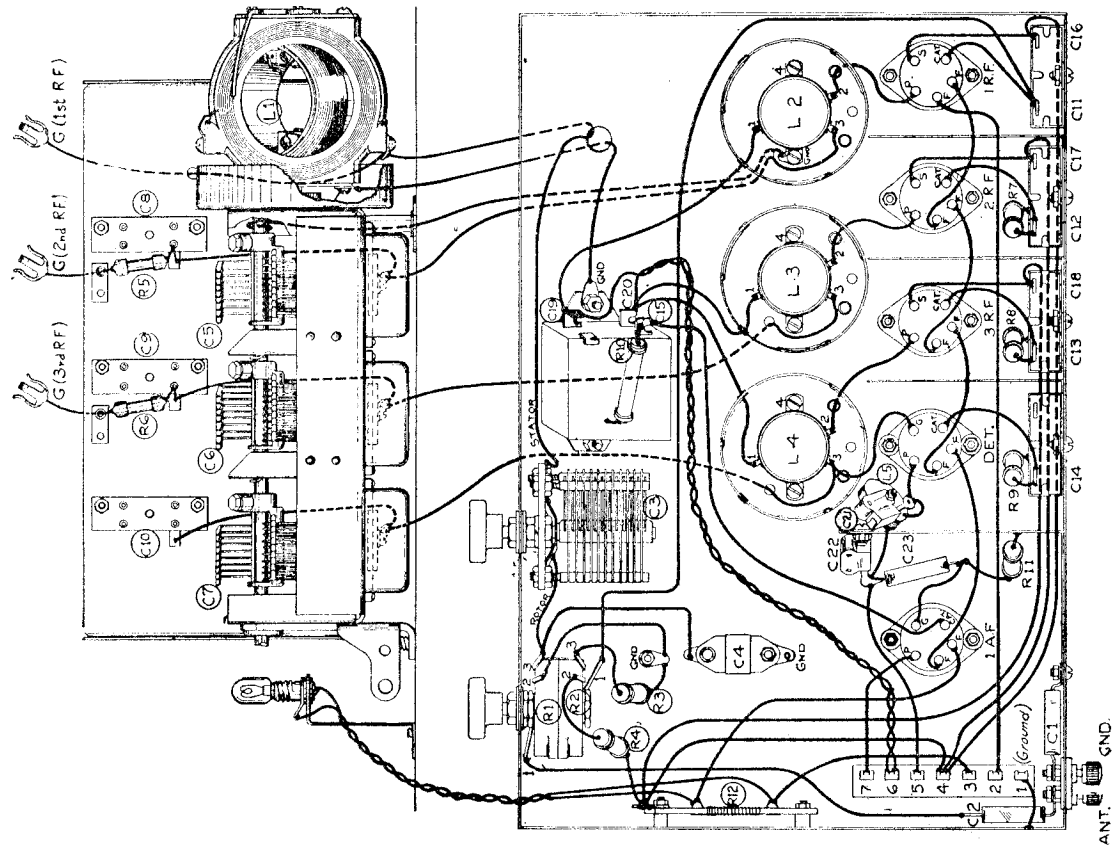


*Variable

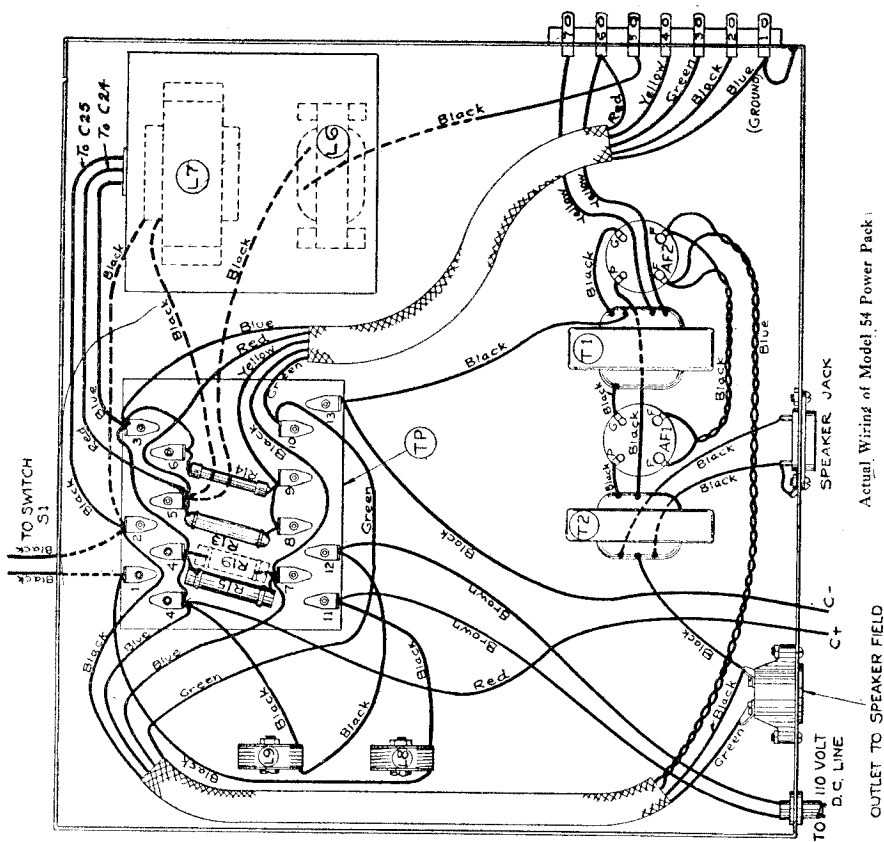
TUBE NO.	TYPE	POSITION	TURNS IN		TURNS IN		TURNS IN		TURNS IN		TURNS IN	
			1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	254	1st R.F.	1	2	1	2	1	2	1	2	1	2
2	254	2nd R.F.	1	2	1	2	1	2	1	2	1	2
3	257	3rd R.F.	1	2	1	2	1	2	1	2	1	2
4	257	DET.	1	2	1	2	1	2	1	2	1	2
5	257	1st A.F.	1	2	1	2	1	2	1	2	1	2
6	257	2nd A.F.	1	2	1	2	1	2	1	2	1	2
7	111A	2nd A.F.	1	2	1	2	1	2	1	2	1	2
8	257	2nd A.F.	1	2	1	2	1	2	1	2	1	2
9	257	2nd A.F.	1	2	1	2	1	2	1	2	1	2

MODEL 54 DC
Chassis Views

UNITED AMERICAN BOSCH CORP.



Actual Wiring of Model 54 Chassis



Actual Wiring of Model 54 Power Pack

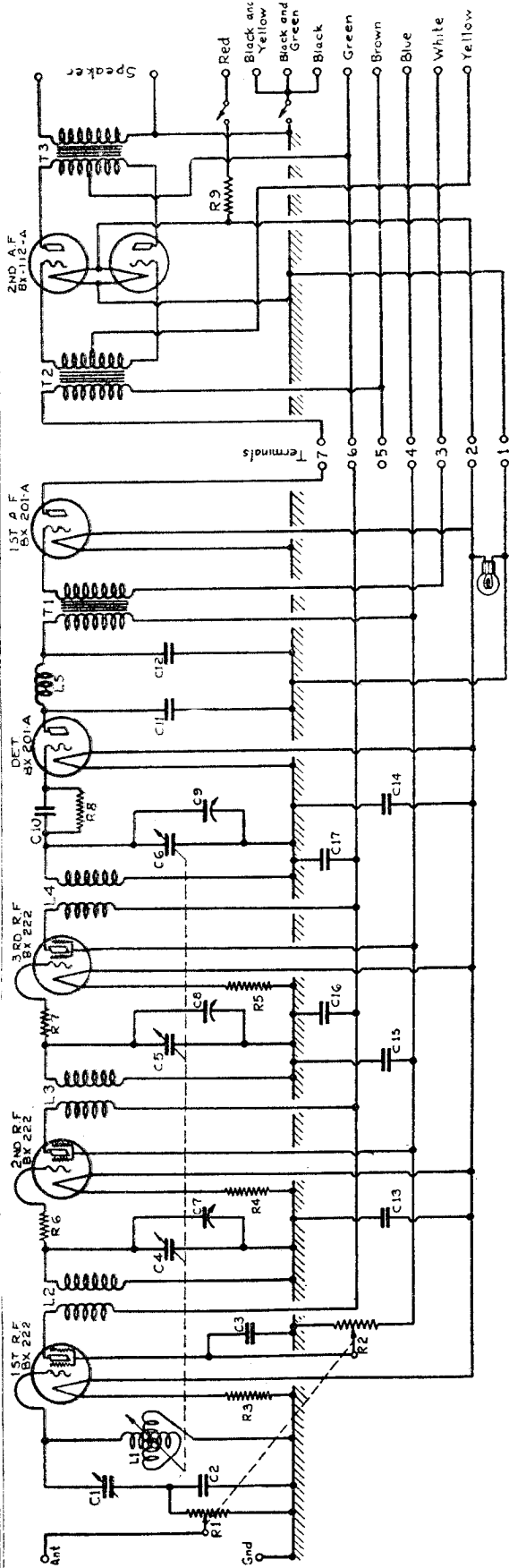
Note: Do not attempt to switch the receiver "on" until all tubes are in place, and aerial and ground are connected.

Connect the ground wire *only* to the terminal provided. Do *not* connect it to any other portion of the chassis.

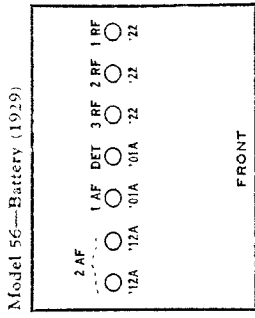
Loud Speaker: The speaker used with the model 54 Bosch receiver is an electromagnetic type similar to the Bosch models 619 and 620 except that it embodies a special field winding having a resistance of 4 ohms.

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MODEL 56 Battery Schematic Parts List



- C1. Trimming Condenser
- C2. Antenna Condenser .00025 mf.
- C3. Screen By-pass Condenser .5 mf.
- C4. 2nd RF Tuning Condenser
- C5. 3rd RF Tuning Condenser
- C6. Detector Tuning Condenser
- C7. 2nd RF Alignment Condenser
- C8. 3rd RF Alignment Condenser
- C9. Detector Alignment Condenser
- C10. Grid Condenser .00025 mf.
- C11. Detector By-pass Condenser .001 mf.
- C12. Detector By-pass Condenser .001 mf.
- C13. Filament By-pass Condenser .5 mf.
- C14. Filament By-pass Condenser .5 mf.
- C15. Screen By-pass Condenser .5 mf.
- C16. Plate By-pass Condenser .5 mf.
- C17. Plate By-pass Condenser .5 mf.
- R1. Volume Control (Antenna) 10,000 ohms
- R2. Volume Control (Screen) 50,000 ohms
- R3. Filament Resistor 12.8 ohms
- R4. Filament Resistor 12.8 ohms
- R5. Filament Resistor 12.8 ohms
- R6. 2nd RF Grid Resistor 250 ohms
- R7. 3rd RF Grid Resistor 250 ohms
- R8. Grid Leak 2 meg.
- R9. Main Filament Resistor .55 ohms
- T1. 1st Audio Transformer
- T2. 2nd Audio Input Transformer
- T3. 2nd Audio Output Transformer
- L1. Variometer
- L2. 2nd RF Coil
- L3. 3rd RF Coil
- L4. Detector Coil
- L5. Detector Choke Coil



Model 56 Battery Operated

The table model is known as the model 56 and is to be used with the Bosch model 616 speaker. The console model (model 56AB) consists of the table model used in conjunction with the AB console. A type 612 speaker is used in the console.

MODEL 56 Battery
Chassis Views
Voltage

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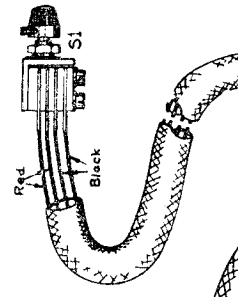
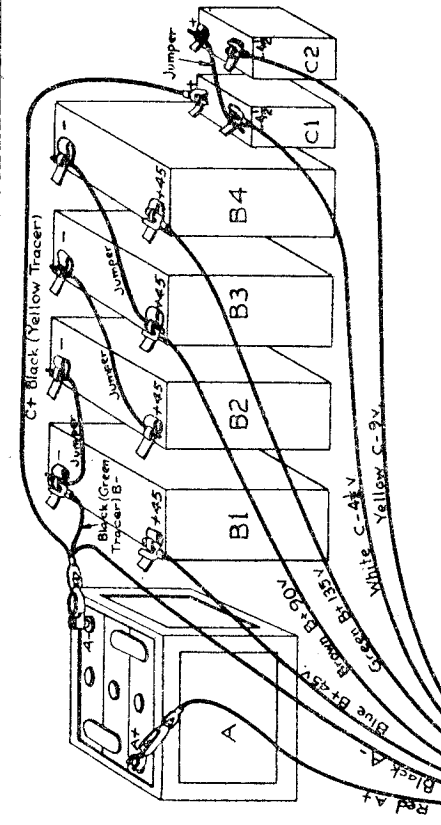
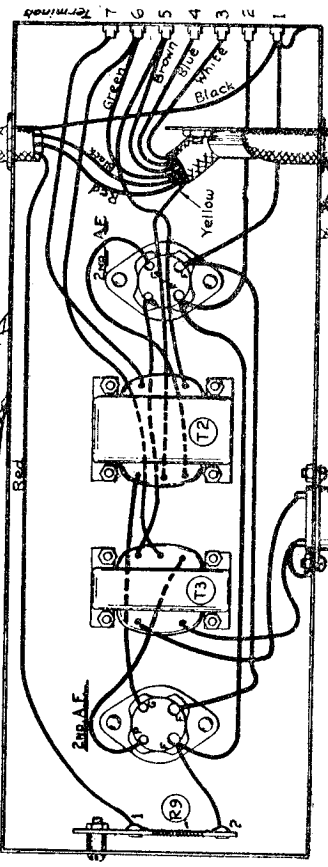


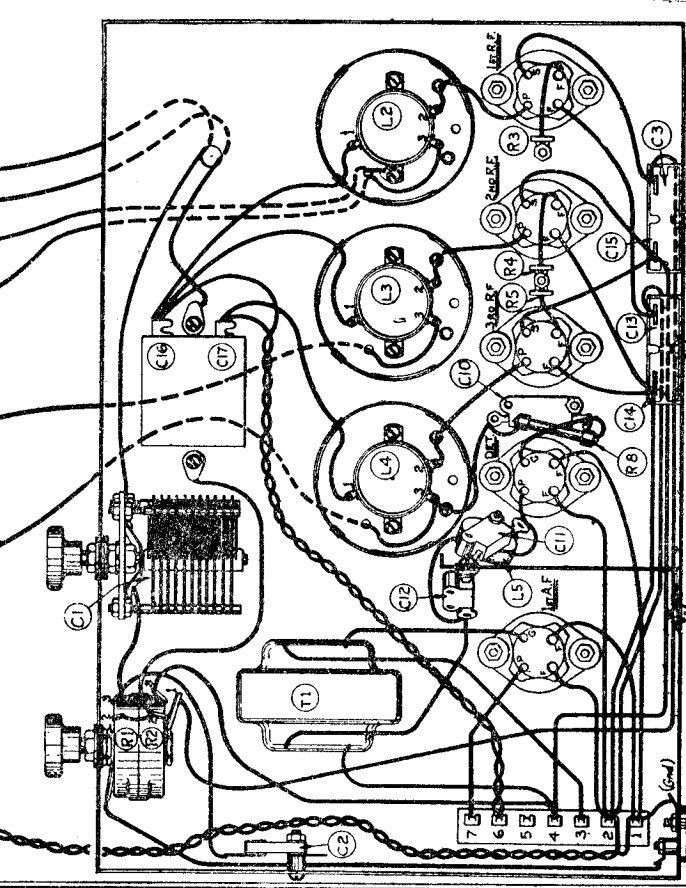
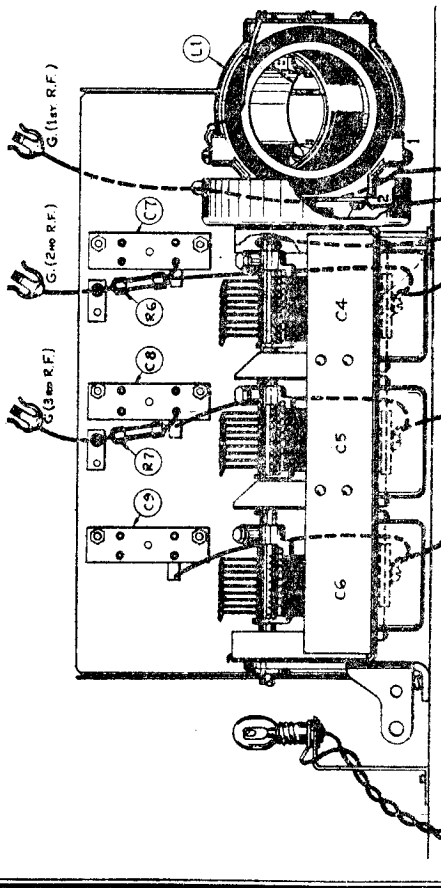
Diagram of Power Pack Wiring



BOSCH—Model 56

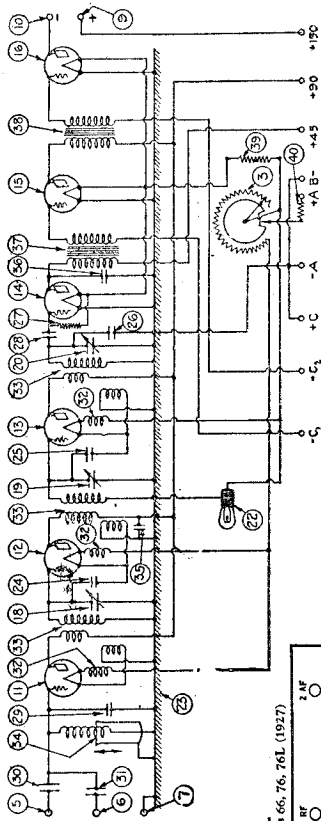
All readings taken with tubes in sockets

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN CHASSIS	TUBE OUT		TUBE IN TESTER		CATHODE NORMAL		PLATE		SCREEN GRID	
			VOLTS	DEF. ETC.	VOLTS	DEF. ETC.	VOLTS	HEATER	VOLTS	MA	VOLTS	TEST	VOLTS	MA
1	222	1 R.F.	5.2	1.7	5.2	1.7	1.5	1.5	4.5	4.5	4.5	4.5
2	222	2 R.F.	5.2	1.7	5.2	1.7	1.5	1.5	4.5	4.5	4.5	4.5
3	222	3 R.F.	5.2	1.7	5.2	1.7	1.5	1.5	4.5	4.5	4.5	4.5
4	201A	Det.	5	4.5	5	4.5	2.5	2.5	7	7	7	7
5	112A	2 A.F.	5	1.35	5	1.35	9	9	7	7	7	7
6	112A	2 A.F.	5	1.35	5	1.35	9	9	7	7	7	7



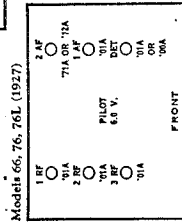
UNITED AMERICAN BOSCH CORP.

MODEL 57,87
 MODEL 66,76,76-L
 MODEL 66AC,96,116
 136. AC
 MODEL 107 AC

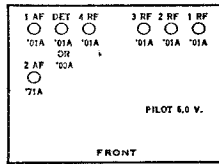


Models 66, 76, and 76L Receivers—The "Cruiser"

Models 66, 76, 76L (1927)

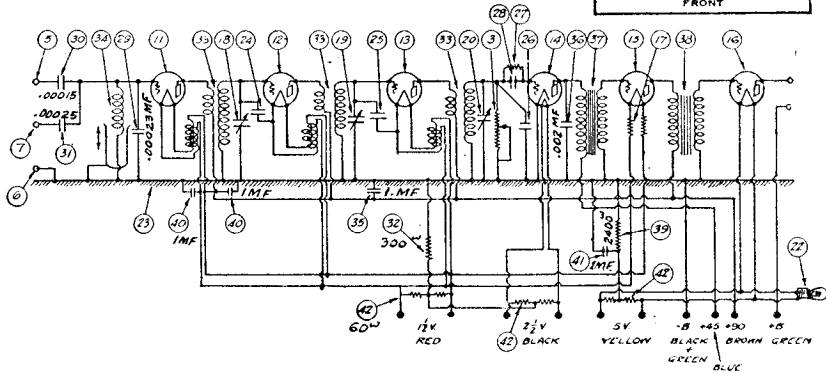
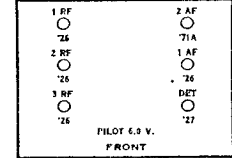


Models 57, 87 (1927)

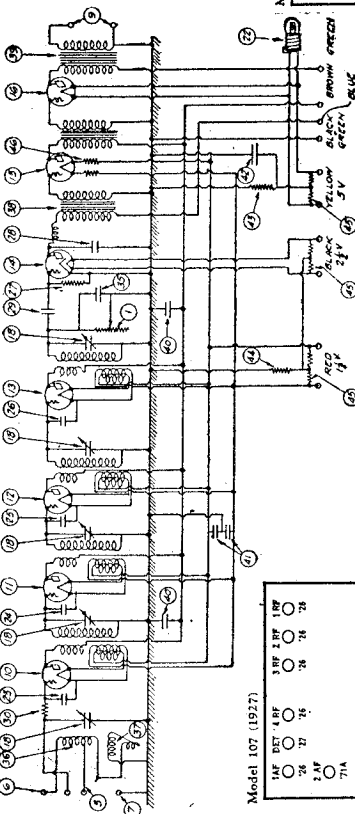


Models 57 and 87 Receivers

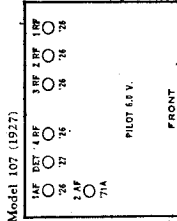
Models 66 AC, 96, 116, 136 (1927)



Models 66AC, 96, 116, 136 Receivers (for AC operation)
 "CRUISER"



Model 107 Receiver (for AC operation)

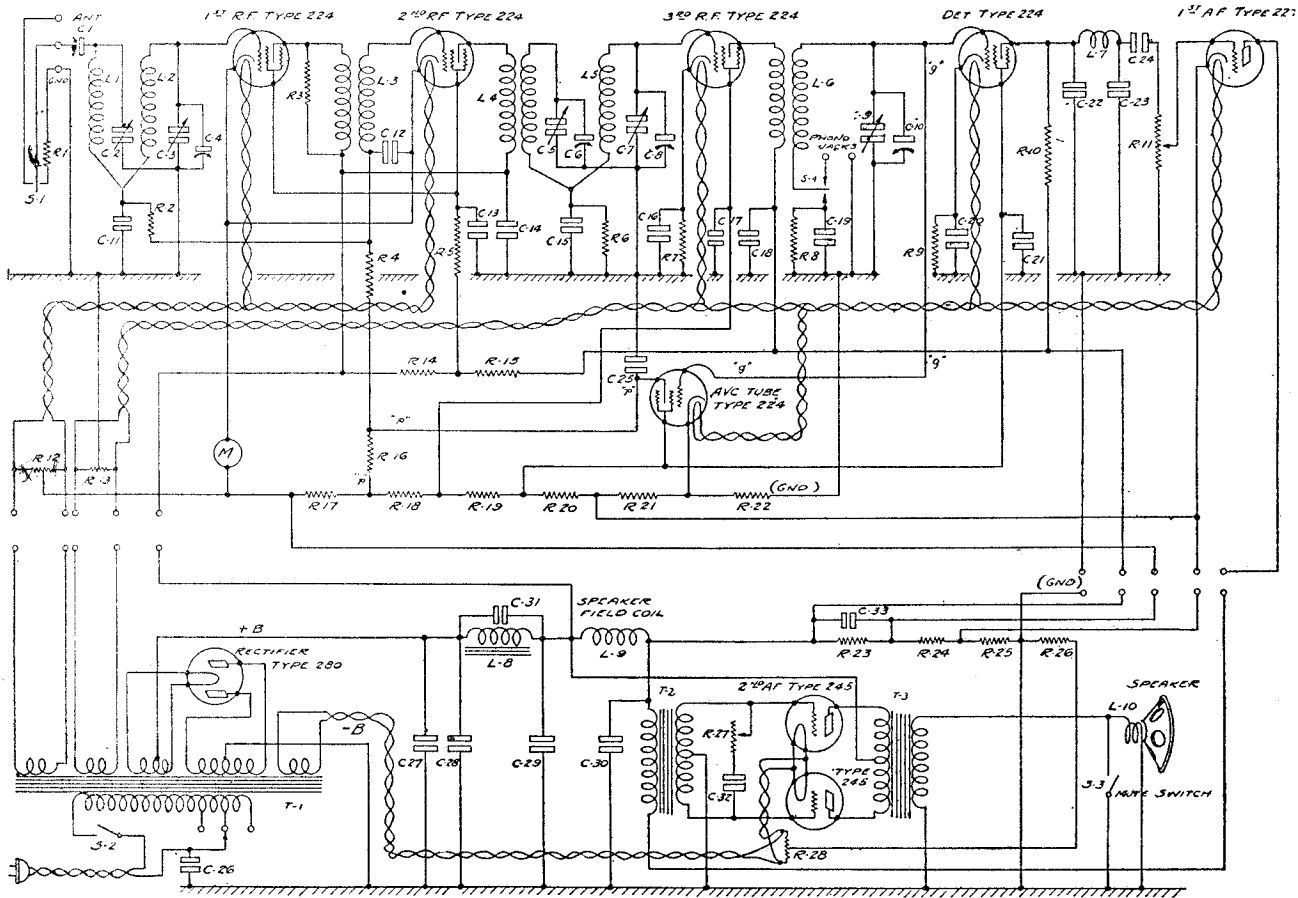


Receiver	Circuit	Radio Frequency Stages				Detector Stage	Audio Stages		
		1	2	3	4		1	2	3
66AC, 96, 116, 136, (Regular AC Six Tube Chassis)	Filament	*1.4	*1.4	*1.4	—	*2.3	*1.4	*5	—
	Plate	90	90	90	—	45	70	130	—
	Grid	5	5	5	—	0	1	8 to 9	—
Model {57, 87}	Filament	5	5	5	5	5	5	5	—
	Plate	90	90	90	90	45	80	100	—
	Grid	3	5	5	5	0	1	3	—
Model {66, 76}	Filament	5	5	5	—	5	5	5	—
	Plate	90	90	90	—	45	80	100	—
	Grid	5	5	5	—	0	1	3	—
107 (Seven Tube AC Chassis)	Filament	*1.4	*1.4	*1.4	*1.4	*2.3	*1.4	*5	—
	Plate	90	90	90	90	45	70	130	—
	Grid	3	5	5	5	0	1	8 to 9	—

MODEL 60, 60-D,
60-E, 61

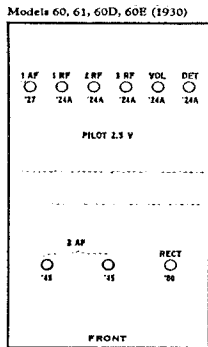
UNITED AMERICAN BOSCH CORP.

Schematic
Voltage
Parts List



-Schematic Diagram of Model 60 Receiver.

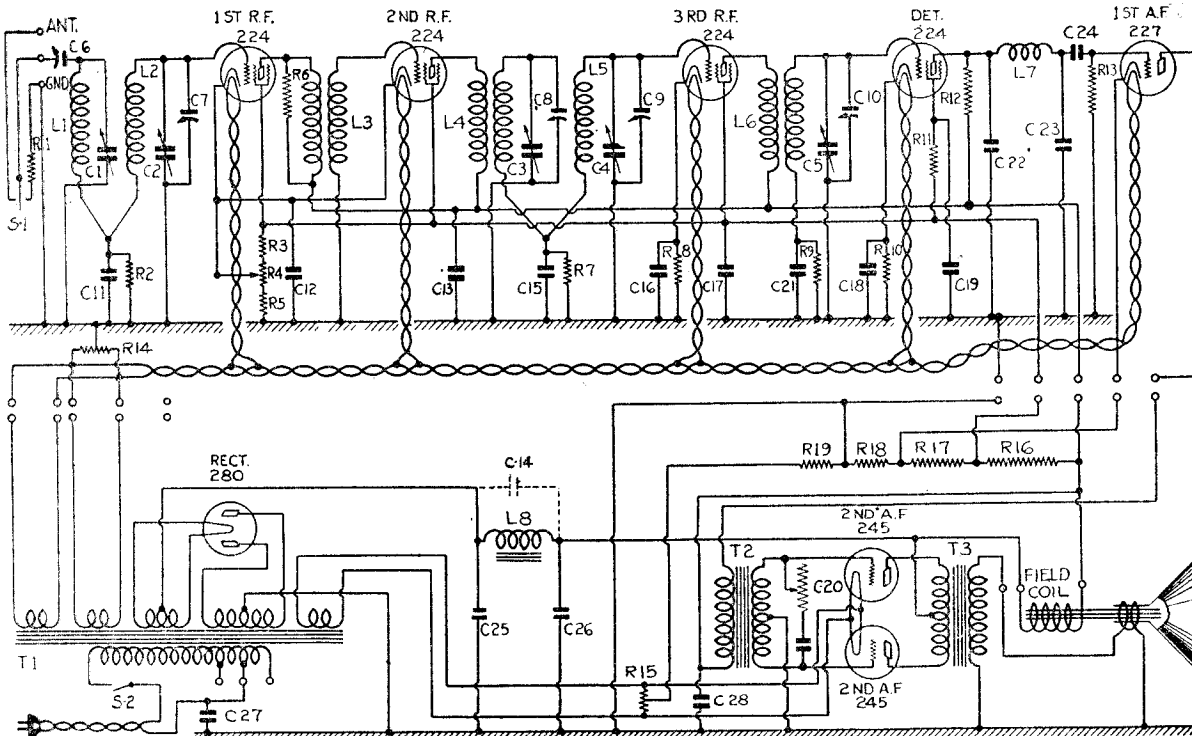
- L1—1st RF Coil
- L2—1st RF Coil
- L3—2nd RF Coil (untuned)
- L4—3rd RF Coil
- L5—3rd RF Coil
- L6—Detector Coil
- L7—Detector Plate Choke
- L8—Power Pack Filter Choke
- L9—Speaker Field Coil
- L10—Speaker Voice Coil
- T1—Main Power Transformer
- T2—Audio Input Transformer
- T3—Audio Output Transformer
- C1—Antenna Trimmer Capacitor
- C2—1st RF Tuning Capacitor
- C3—1st RF Tuning Capacitor
- C4—1st RF Alignment Capacitor
- C5—3rd RF Tuning Capacitor
- C6—3rd RF Alignment Capacitor
- C7—3rd RF Tuning Capacitor
- C8—3rd RF Alignment Capacitor
- C9—Detector Tuning Capacitor
- C10—Detector Alignment Capacitor
- C11—1st RF Coupling Capacitor .04 mfd
- C12—2nd RF Grid Return Capacitor .5 mfd.
- C13—1st and 2nd RF Screen Capacitor .25 mfd.



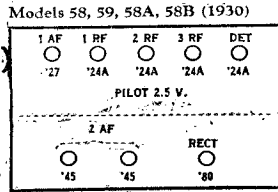
- C14—1st and 2nd RF Plate Capacitor .25 mfd.
- C15—3rd RF Coupling Capacitor .04 mfd.
- C16—3rd RF Cathode Capacitor .5 mfd.
- C17—3rd RF Screen Capacitor .5 mfd.
- C18—3rd RF Plate Capacitor .5 mfd.
- C19—Detector Grid Return Capacitor .04 mfd.
- C20—Detector Cathode Capacitor 1. mfd.
- C21—Detector Screen Capacitor .5 mfd.
- C22—Detector Plate By-pass Capacitor .0001 mfd.
- C23—Detector Plate By-pass Capacitor .0001 mfd.
- C24—Audio Coupling Capacitor .006 mfd.
- C25—AVC Plate By-pass Capacitor .006 mfd.
- C26—Buffer Capacitor .1 mfd.
- C27—Power Pack Filter Capacitor 2. mfd.
- C28—Power Pack Filter Capacitor 2. mfd.
- C29—Power Pack Filter Capacitor 4. mfd.
- C30—Power Pack Filter Capacitor 2. mfd.
- C31—Filter Choke Tuning Capacitor .075 mfd.
- C32—Tone Control Capacitor .006 mfd.
- C33—By-pass Capacitor 2. mfd.
- R1—Antenna Resistance 500 ohms
- R2—1st RF de-coupling Resistor 1000 ohms
- R3—Untuned Coil Resistor 50,000 ohms
- R4—1st and 2nd RF Grid Resistor .5 meg.
- R5—1st and 2nd RF Screen Resistor 18,000 ohms
- R6—3rd RF de-coupling Resistor 1,000 ohms
- R7—3rd RF Bias Resistor 1,000 ohms
- R8—Detector Grid Resistor 1,000 ohms
- R9—Detector Bias Resistor 50,000 ohms
- R10—Detector Plate Resistor .5 meg.
- R11—Volume Control .5 meg.
- R12—1st and 2nd RF Center Tap Resistor
- R13—Center Tap Resistor
- R14—1st and 2nd RF Screen Resistor 20,000 ohms
- R15—Resistor 10,000 ohms
- R16—AVC Resistor .5 megohms
- R17—Resistor 900 ohms
- R18—3rd RF Screen Resistor 5,000 ohms
- R19—AVC and Detector Screen Resistor 25,000 ohms
- R20—Resistor 5,000 ohms
- R21—1st AF Bias Resistor 2,000 ohms
- R22—AVC Bias Resistor 2,000 ohms
- R23—Voltage Divider Resistor 1,300 ohms
- R24—Voltage Divider Resistor 2,380 ohms
- R25—Voltage Divider Resistor 160 ohms
- R26—2nd Audio Bias Resistor 950 ohms
- R27—Tone Selector Resistor .5 megohm
- R28—2nd Audio Center Tap Resistor

UNITED AMERICAN BOSCH CORP.

MODEL 58 AC
Schematic
Voltage
Parts List



- L 1 -1st RF Coil
- L 2 -1st RF Coil
- L 3 -2nd RF Coil (untuned)
- L 4 -3rd RF Coil
- L 5 -3rd RF Coil
- L 6 -Detector Coil
- L 7 -Detector Plate Choke
- L 8 -Filter Choke
- T 1 -Main Power Transformer
- T 2 -Audio Input Transformer
- T 3 -Audio Output Transformer
- C 1 -1st RF Tuning Capacitor
- C 2 -1st RF Tuning Capacitor
- C 3 -3rd RF Tuning Capacitor
- C 4 -3rd RF Tuning Capacitor
- C 5 -Detector Tuning Capacitor
- C 6 -Antenna Trimming Capacitor
- C 7 -1st RF Alignment Capacitor
- C 8 -3rd RF Alignment Capacitor
- C 9 -3rd RF Alignment Capacitor
- C 10 -Detector Alignment Capacitor
- C 11 -1st RF Coupling Capacitor .04 mfd.
- C 12 -Cathode By-pass Capacitor .5 mfd.
- C 13 -Plate By-pass Capacitor .5 mfd.
- C 14 -Filter Capacitor .2 mfd. (25 cycle only)
- C 15 -3rd RF Coupling Capacitor .04 mfd.
- C 16 -Cathode By-pass Capacitor .5 mfd.
- C 17 -Screen By-pass Capacitor .5 mfd.
- C 18 -Detector Cathode By-pass Capacitor 1.mfd.
- C 19 -Detector Screen By-pass Capacitor .5 mfd
- C 20 -Tone Control Capacitor .006 mfd.
- C 21 -Detector Capacitor .04 mfd.
- C 22 -Detector Plate By-pass Capacitor .0001
- C 23 -Detector Plate By-pass Capacitor .0001
- C 24 -Audio Coupling Capacitor .006 mfd.



- C 25 -Power Pack Filter Condenser 2 mfd.
- C 26 -Power Pack Filter Condenser 2 mfd.
- C 27 -Buffer Condenser 1 mfd
- C 28 -Audio By-pass Condenser 4 mfd.
- R 1 -Antenna Resistor 500 ohms
- R 2 -De-coupling Resistor 1,000 ohms
- R 3 -Screen Resistor 20,000 ohms
- R 4 -Volume Control 3,000 ohms
- R 5 -Screen Resistor 250 ohms
- R 6 -Untuned Transformer Resistor .1 megohm
- R 7 -3rd RF de-coupling Resistor 1,000 ohms
- R 8 -3rd RF Cathode Resistor 1,000 ohms
- R 9 -Detector Grid Resistor 1,000 ohms
- R 10 -Detector Cathode Resistor 50,000 ohms
- R 11 -Detector Screen Resistor 1 megohm
- R 12 -Detector Plate Resistor .25 megohm
- R 13 -1st Audio Grid Resistor 2 megohms
- R 14 -Center Tap Resistor (chassis)
- R 15 -Center Tap Resistor (power pack)
- R 16 -Screen Supply Resistor 2,050 ohms
- R 17 -Audio Cathode Resistor 1,950 ohms
- R 18 -Divider Resistor 180 ohms
- R 19 -Audio Bias Resistor 950 ohms
- R 20 -Tone Control 5 megohm

Line Voltage 115—Voltage Tap 115
Volume Control Full On

*Not true readings due to resistors in circuit.

TUBE NO. OR ORDER NUMBER	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES					MILL	
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID SPACE	NORMAL GRID SPACE	CATHODE TO SCREEN GRID HEATER	SCREEN GRID TO PLATE	A. M. W. PLATE	A. M. W. PLATE
1	224	1 R.F.	2.2	170	2.2	75	-	-	3
2	224	2 R.F.	2.2	170	2.2	75	-	-	3
3	224	3 R.F.	2.2	170	2.2	75	-	-	3
4	224	Det.	2.2	30*	1.5	10*	-	-	.1*
5	227	1 A.F.	2.2	150	-	8	-	-	5
6	245	PP-AF	2.4	250	-	50	-	-	30
7	245	PP-AF	2.4	250	-	50	-	-	30
8	280	Rect.	5.0	-	-	-	-	-	-

MODEL 62 DC

Electrical Values
Voltage

UNITED AMERICAN BOSCH CORP.

- C12 -Cathode By-pass Condenser .5 mfd.
- C13 -Plate By-pass Condenser .5 mfd.
- C14 -Screen By-Pass Condenser .5 mfd.
- C15 -3rd RF Coupling Condenser .04 mfd
- C16 -3rd RF Cathode Condenser .5 mfd.
- C17 -Detector Condenser .04 mfd.
- C18 -Detector Cathode Condenser 1. mfd.
- C19 -Detector Screen Condenser .5 mfd.
- C20 -Detector Plate By-pass Condenser .0001 mfd
- C21 -Detector Plate By-pass Condenser .0001 mfd.
- C22 -Audio Coupling Condenser .006 mfd.
- C23 -Ground Condenser .006 mfd.
- C24 -Filter Condenser 4 mfd.
- C25 -Filter Condenser 4 mfd.
- C26 -Tone Selector Condenser .002 mfd.
- S 1 -Local-Long Distance Switch
- S 2 -Off and On Switch
- B 1 -"C" Battery -22½ volts
- T 1 -Audio Input Transformer
- T 2 -Audio Output Transformer
- L 1 -1st RF Coil
- L 2 -1st RF Coil
- L 3 -Untuned Transformer
- L 4 -3rd RF Coil
- L 5 -3rd RF Coil
- L 6 -Detector Coil
- L 7 -Detector Plate Choke
- L 8 -Filter Choke
- L 9 -Filter Choke
- L10 -Filter Choke

- R 1 -Antenna Resistor 500 ohms
- R 2 -De-coupling Resistor 1,000 ohms
- R 3 -Resistor 20,000 ohms
- R 4 -Volume Control 3,000 ohms
- R 5 -Resistor 150 ohms
- R 6 -Untuned Transformer Resistor .1 meg.
- R 7 -De-coupling Resistor 1,000 ohms
- R 8 -3rd RF Cathode Resistor 600 ohms
- R 9 -Resistor 1,000 ohms
- R10 -Detector Cathode Resistor 50,000 ohms
- R11 -Detector Screen Resistor 1 meg.
- R12 -Detector Plate Resistor .5 meg.
- R13 -1st Audio Grid Resistor 2 meg.
- R14 -Filament Resistor 1.8 ohms
- R15 - Filament Resistor 18 ohms
- R16 -Filament Resistor 18 ohms
- R17 -Filament Resistor 18 ohms
- R18 -Tone Selector Resistor .5 meg.
- R19 -Voltage Divider Resistor 1,400 ohms
- R20 -Voltage Divider Resistor 2,600 ohms
- R21 -Voltage Divider Resistor 250 ohms
- C 1 -1st RF tuning Condenser
- C 2 -1st RF Tuning Condenser
- C 3 -3rd RF Tuning Condenser
- C 4 -3rd RF Tuning Condenser
- C 5 -Detector Tuning Condenser
- C 6 -Antenna Trimming Condenser
- C 7 -1st RF Alignment Condenser
- C 8 -3rd RF Alignment Condenser
- C 9 -3rd RF Alignment Condenser
- C10 -Detector Alignment Condenser
- C11 -1st RF Coupling Condenser .04 mfd.

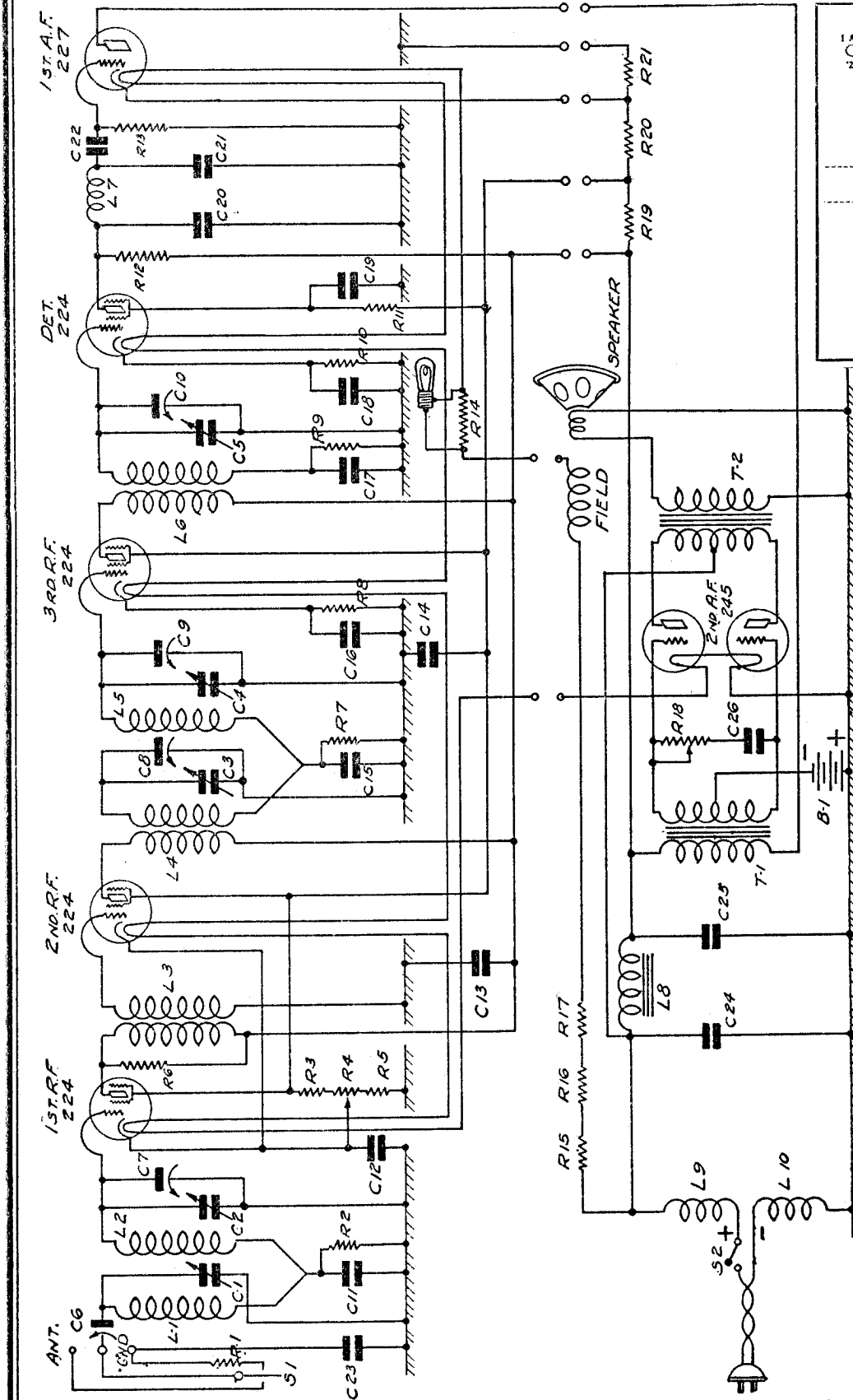
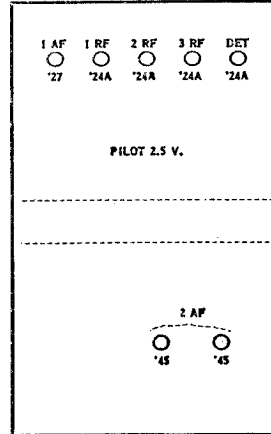
SOCKET VOLTAGES - MODEL 62

STAGE	Tube	Plate	Screen	Grid.	Fil.	Plate MA.
1st RF.....	224	100	60	10	2.1	1.5
2nd RF.....	224	100	60	9	2.1	1.5
3rd RF.....	224	100	60	8	2.1	1.5
Detector.....	224	30	15	*	2.1	*
1st AF.....	227	85	"	8	2.1	2.5
2nd AF.....	245	105	"	20	2.1	8
2nd AF.....	245	105	"	20	2.1	8

UNITED AMERICAN BOSCH CORP.

MODEL 62 DC
Schematic
Socket

Model 62C (110 V. DC) (1930)



Schematic Diagram of Model 62 Receivers

For Resistor Color Code See Model 63

MODEL 63 DC
Values
Resistor Code
Voltage

UNITED AMERICAN BOSCH CORP.

Model 63 Receiver

- R 1—Antenna Resistor 500 ohms
- R 2—De-coupling Resistor 1,000 ohms
- R 3—Untuned Transformer Resistor 50,000 ohms
- R 4—De-coupling Resistor 1,000 ohms
- R 5—3rd RF Cathode Resistor 600 ohms
- R 6—Detector Resistor 1,000 ohms
- R 7—Detector Cathode Resistor 50,000 ohms
- R 8—Detector Plate Resistor .5 meg.
- R 9—Volume Control .5 meg.
- R10—1st and 2nd RF Bias Resistor 1 meg.
- R11—Bias Control Resistor 1 meg.
- R12—Filament Resistor 1.3 ohms
- R13—AVC Screen Resistor 20,000 ohms
- R14—Voltage Divider Resistor 150 ohms
- R15—Voltage Divider Resistor 900 ohms
- R16—Voltage Divider Resistor 5,000 ohms
- R17—Voltage Divider Resistor 20,000 ohms
- R18—Filament Resistor 18 ohms
- R19—Filament Resistor 18 ohms
- R20—Filament Resistor 18 ohms
- R21—Tone Control Resistor .5 meg.
- R22—Voltage Divider Resistor 1,400 ohms
- R23—Voltage Divider Resistor 2,600 ohms
- R24—Voltage Divider Resistor 250 ohms

- C 1—1st RF Tuning Condenser
- C 2—1st RF Tuning Condenser
- C 3—3rd RF Tuning Condenser
- C 4—3rd RF Tuning Condenser
- C 5—Detector Tuning Condenser
- C 6—Antenna Trimmer Condenser
- C 7—1st RF Alignment Condenser
- C 8—3rd RF Alignment Condenser

- C 9—3rd RF Alignment Condenser
- C10—Detector Alignment Condenser
- C11—Ground Series Condenser .0001 mfd.
- C12—1st RF Coupling Condenser .04 mfd.
- C13—2nd RF Condenser .5 mfd.
- C14—Cathode By-pass Condenser .5 mfd.
- C15—3rd RF Coupling Condenser .04 mfd.
- C16—3rd RF Cathode Condenser .5 mfd.
- C17—Detector Condenser .04 mfd.
- C18—Detector Cathode Condenser 1 mfd.
- C19—Detector Plate Condenser 1 mfd.
- C20—Detector Plate Condenser .0001 mfd.
- C21—Detector Plate Condenser .0001 mfd.
- C22—Audio Coupling Condenser .006 mfd.
- C23—Plate By Pass Condenser .25 mfd.
- C24—Screen By Pass Condenser .25 mfd.
- C25—Plate By Pass Condenser .5 mfd.
- C26—AVC Plate By Pass Condenser .006 mfd.
- C27—AVC Screen Condenser .5 mfd.
- C28—Filter Condenser 4 mfd.
- C29—Filter Condenser 4 mfd.
- C30—Tone Control Condenser .006 mfd.

- T 1—Input Transformer
- T 2—Output Transformer

- B 1—AVC Plate Battery 22½ volts
- B 2—2nd Audio "C" Battery 22½ volts

- S 1—Local Distance Switch
- S 2—Phono Switch
- S 3—Main Switch
- S 4—Mute Switch

The resistors used in the Models 62 and 63 receivers are marked in colors as a means of identification. The complete color code is as follows:

- 150 ohms — Red-black
- 250 ohms — White
- 500 ohms — Yellow
- 600 ohms — Blue-black
- 900 ohms — Black-brown
- 1,000 ohms — White-red
- 2,000 ohms — Brown-yellow
- 2,500 ohms — White-brown

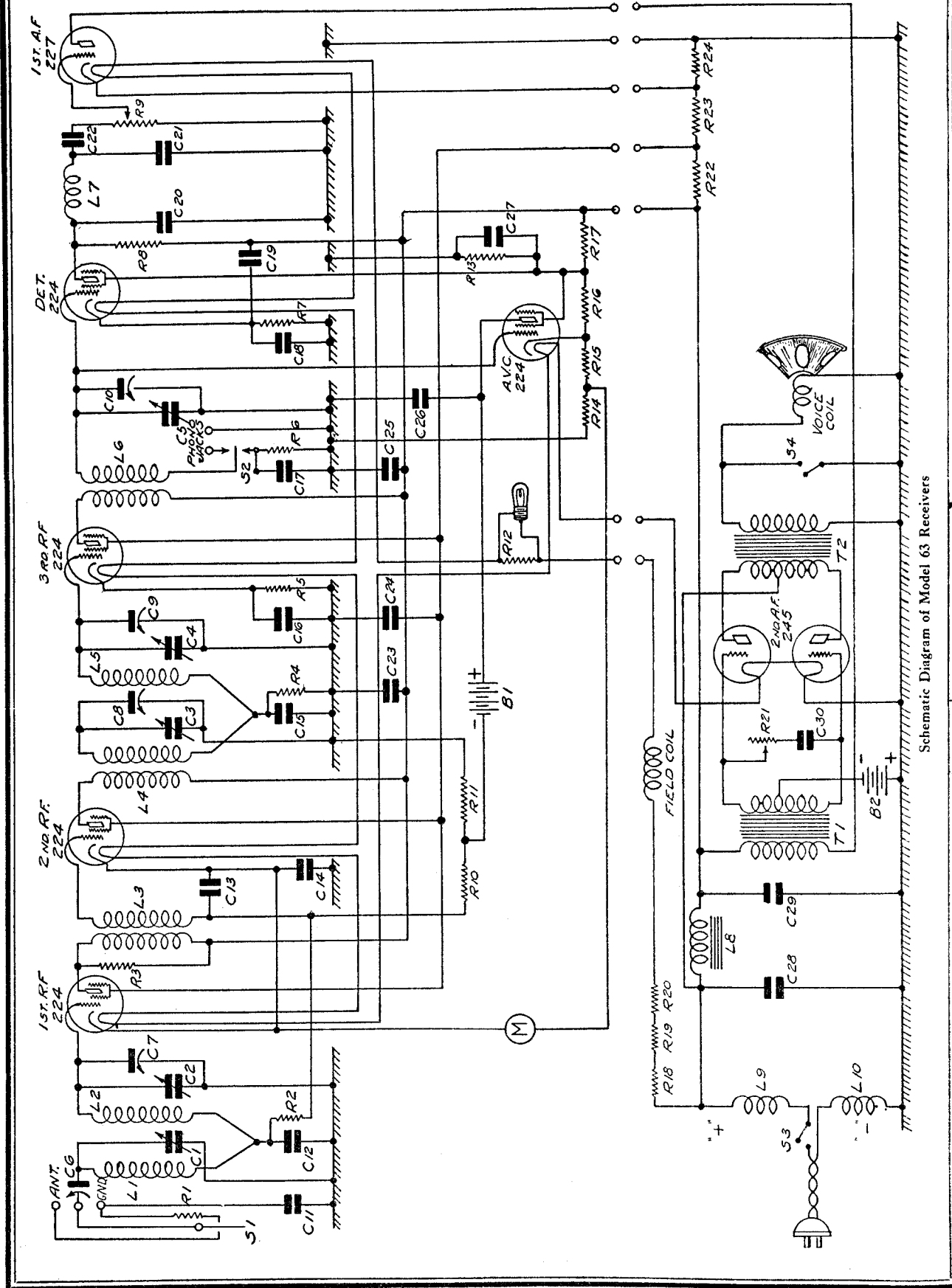
- 5,000 ohms — Black-yellow
- 10,000 ohms — Blue-yellow
- 18,000 ohms — White-gray
- 20,000 ohms — Green-yellow
- 25,000 ohms — Blue
- 50,000 ohms — Green-white
- .1 megohm — Blue-white
- .25 megohms — Brown
- .5 megohms — Grey
- 1. megohm — Black
- 2. megohms — Black-white

SOCKET VOLTAGES - MODEL 63

Stage	Tube	Plate	Screen	Grid.	Fil.	Plate MA.
1st RF.....	224	100	60	1	2.1	1.5
2nd RF.....	224	100	60	1	2.1	1.5
3rd RF.....	224	100	60	1	2.1	1.5
AVC.....	224	10	20	3	2.1	*
Detector.....	224	30	15	1	2.1	*
1st AF.....	227	85	-	8	2.1	2.5
2nd AF.....	245	105	-	20	2.1	8
2nd AF.....	245	105	-	20	2.1	8

UNITED AMERICAN BOSCH CORP

MODEL 63 DC
Schematic



Schematic Diagram of Model 63 Receivers

MODEL 73,74

Parts List

Voltage - Data

UNITED AMERICAN BOSCH CORP.

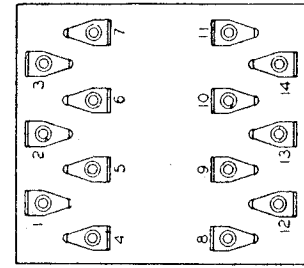


Fig. 4
Terminal Plate of Main Power Transformer T3

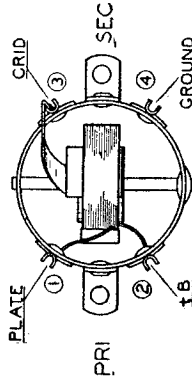
If the transformer is perfect a following readings will be obtained:

- Filament Winding 1500 ohms (See T1, pages 5 and 6)
- Primary Winding (each half) 4000 ohms
- Secondary Winding (each half) 4000 ohms

AUDIO OUTPUT TRANSFORMER "T2"

This unit may be identified by the low resistance heavy secondary winding terminating at "1" and "2."

- Primary Winding (each half) 200 ohms
- Secondary Winding full reading



Top View of Coil

MAIN POWER TRANSFORMER "T3"

- No. 1. Start of Primary Wind
 - No. 3. 110 Volt Tap
 - No. 4. Center Tap of 280 Plate Winding
 - No. 6. Filament Supply Winding
 - No. 7. 120 Volt Tap
 - No. 9. Filament Supply Winding
- Filament Supply to 280 tube are heavy wires direct from winding.
- Plate Supply to 280 tube are stranded wires direct from winding.

If the transformer is perfect the following readings will be obtained:

- Filament Winding 1 to 3—full reading
- 1 to 7—full reading
- Filament Supply Sec. 6 to 9—full reading
- 280 Filament Winding F to F of 280 socket—full reading
- 280 Plate Winding P to P of 280 socket—350 ohms
- 280 Center Tap 4 to P of 280 socket—175 ohms

AUDIO INPUT TRANSFORMER "T1"

This is a special unit having a ratio of 6 to 1. Under no circumstances may it be replaced by any other type of transformer, nor may it be used as a replacement in receivers of other models. It may be identified by the mounting for the small choke coil.

COIL TEST:

- Circuit Test—From 1 to 2—full reading
 - From 3 to 4—full reading
- A reading from 1 or 2 to either 3 or 4 denotes a defective (short circuited) coil. In this case the primary coil may be replaced. It is very important that it is placed exactly in the center of the secondary, and that the wire on which it is mounted is perfectly straight.

The coupling units (C2, C3 and C4) are not ordinary condensers, but are formed of the capacity between the plate end (1) of the primary winding and the small brass plate which is connected to the grid terminal 2.

As volume is decreased, Grid voltage increases, Screen voltage increases, 1st RF Plate current decreases, 2nd RF Plate voltage increases.

NOMENCLATURE

Resistors

- R1 Volume Control 10,000 ohms
- R2 2750 ohms (Tapped unit
- R3 250 ohms)
- R4 Cathode Resistor 750 ohms
- R5 Cathode Resistor 25,000 ohms
- R6 50,000 ohms
- R7 Tone Control 50,000 ohms
- R8 Plate Supply Resistor 5,000 ohms.
- R9 Plate Supply Resistor 10,000 ohms
- R10 Screen Supply Resistor 750 ohms
- R11 Cathode Resistor 25,000 ohms
- R12 Screen Supply Resistor 30,000 ohms
- R13 Audio Bias Resistor 800 ohms
- R14 Center Tap Resistor 4.1 ohms

Condensers

- C1 Antenna Trimmer Condenser
- C2 Coupling Capacity
- C3 Coupling Capacity
- C4 Coupling Capacity
- C5 Tuning Condenser
- C6 Tuning Condenser
- C7 Tuning Condenser
- C8 Tuning Condenser
- C9 Alignment Condenser
- C10 Alignment Condenser
- C11 Alignment Condenser
- C12 Det. Plate By-pass .005 mfd.
- C13 Tone Control Condenser .05 mfd.

Coils and Inductances

- L1 Antenna Coil
- L2 2nd RF primary
- L3 2nd RF secondary
- L4 3rd RF primary
- L5 3rd RF secondary
- L6 Det. coil primary
- L7 Det. coil secondary
- L8 Degenerative choke
- L9 Det. Plate choke
- L10 Tone Control choke
- L11 Filter choke
- L12 Speaker Field
- L13 Speaker Voice Coil

Transformers

- T1 Audio Input Transformer
- T2 Audio Output Transformer
- T3 Main Power Transformer

Switches

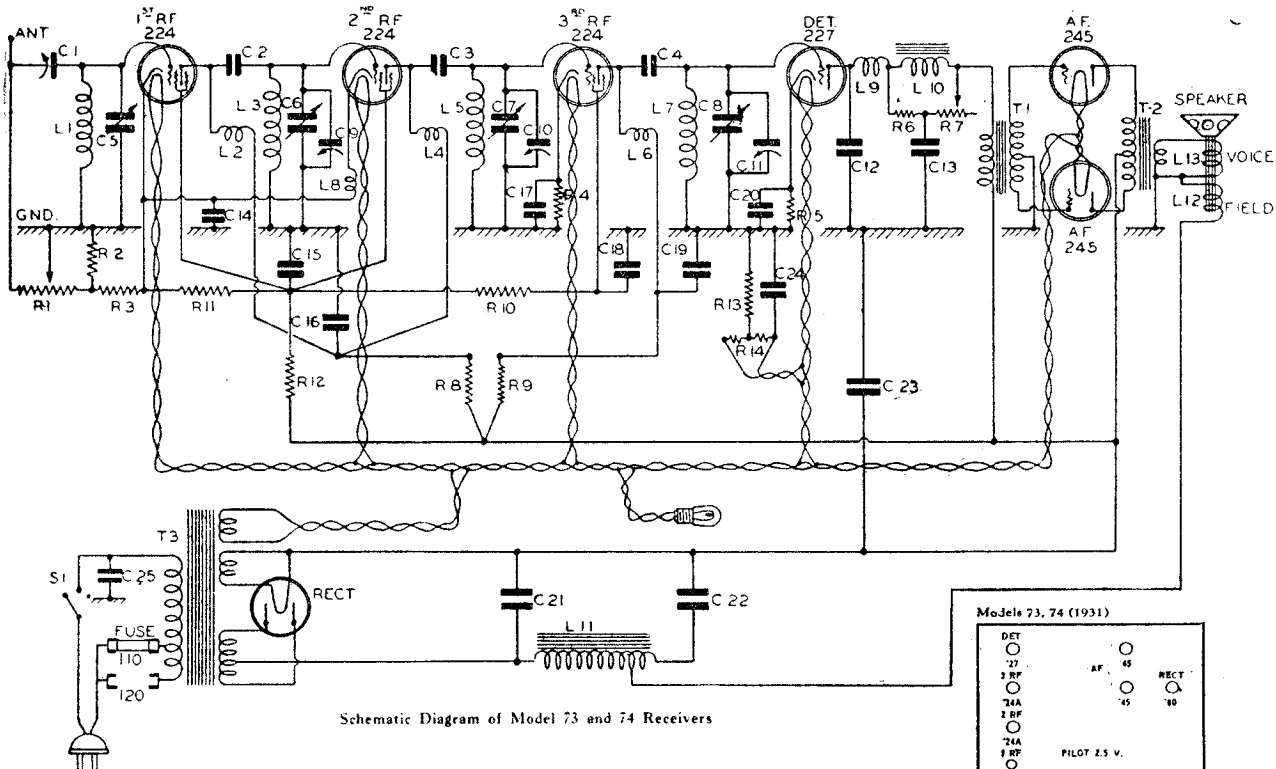
- S1 Main Switch

Model 73 and 74 Voltage Readings

Stage	Tube	Plate	Screen	Cathode	Grid	Fil.	Plate Current
1st RF	224	240	90	44	3	2.2	4
2nd RF	224	240	90	44	3	2.2	4
3rd RF	224	240	90	44	3	2.2	4
Det.	227	250	...	20	25	2.2	1
Audio	245	230	...	...	44	2.3	25
Audio	245	230	...	...	44	2.3	25
Rect.	280	...	...	...	...	4.8	30-30

UNITED AMERICAN BOSCH CORP.

MODEL 73,74
Schematic
Chassis

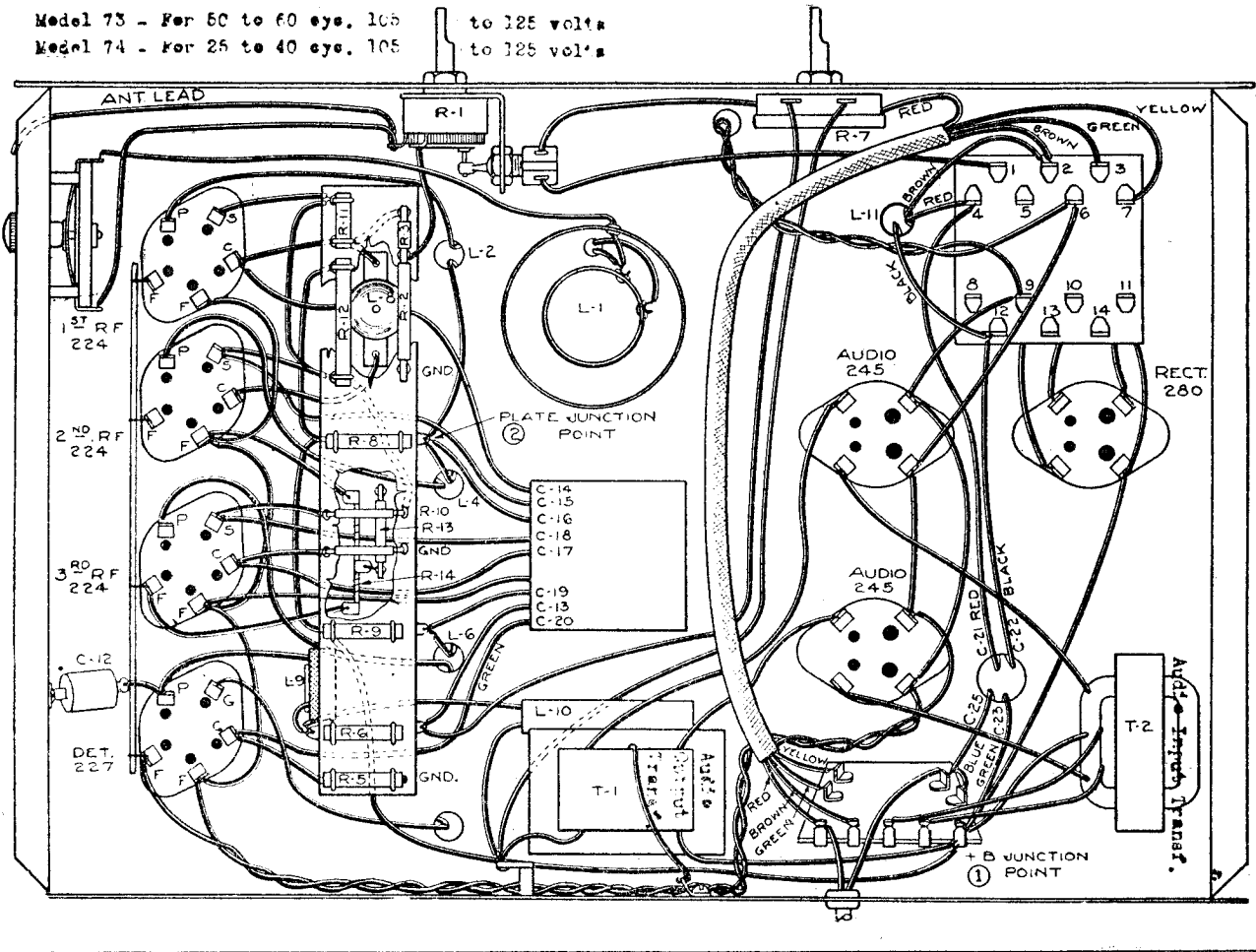


Schematic Diagram of Model 73 and 74 Receivers

Models 73, 74 (1931)

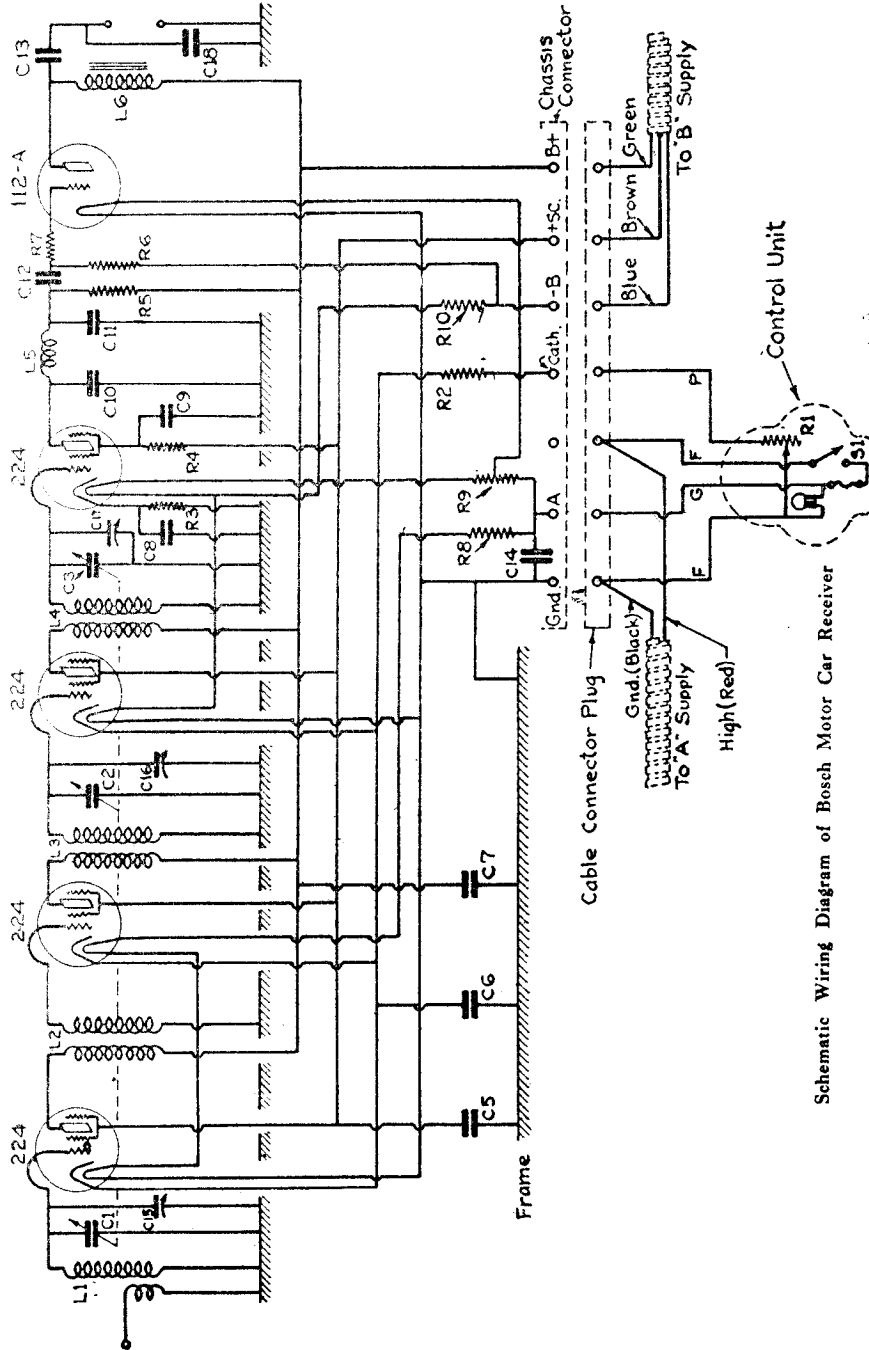
DET	227	AF	45	RECT	10
1 st RF	224				
2 nd RF	224				
3 rd RF	224				
PILOT 2.5 V.					
74A					
74B					
74C					
74D					
74E					

Model 73 - For 50 to 60 eyes, 105 to 125 volts
 Model 74 - For 25 to 40 eyes, 105 to 125 volts



UNITED AMERICAN BOSCH CORP.

MODEL 80
SCHEMATIC
VOLTAGE



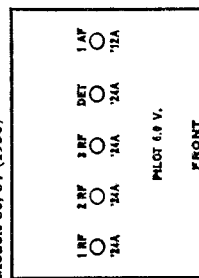
Schematic Wiring Diagram of Bosch Motor Car Receiver

- L-1—1st RF Coil
- L-2—2nd RF Coil
- L-3—3rd RF Coil
- L-4—Detector Coil
- L-5—Detector Choke
- L-6—Output Choke
- R-1—Volume Control 18,000 ohms
- R-2—1st RF Bias Resistor 500 ohms
- R-3—Detector Bias Resistor 25,000 ohms
- R-4—Detector Screen Resistor 500,000 ohms
- R-5—Detector Plate Resistor 500,000 ohms
- R-6—Audio Grid Resistor 2 meg.
- R-7—Series Grid Resistor 250,000 ohms
- R-8—Filament Resistor 1.3 ohms
- R-9—Filament Resistor 1.1 ohms
- R-10—Audio Bias Resistor 900 ohms
- C-1—1st RF Tuning Capacitor
- C-2—2nd RF Tuning Capacitor
- C-3—3rd RF Tuning Capacitor
- C-4—Screen By-pass Capacitor .5mf.
- C-5—Cathode By-pass Capacitor .5mf.
- C-6—Cathode By-pass Capacitor .5mf.
- C-7—Plate By-pass Capacitor 1mf.
- C-8—Detector Cathode Capacitor .5mf.
- C-9—Detector Screen Capacitor .5mf.
- C-10—Detector Plate Capacitor .0001mf.
- C-11—Detector Plate Capacitor .0001mf.
- C-12—Coupling Capacitor .002mf.
- C-13—Output Capacitor 1mf.
- C-14—Filament By-pass Capacitor
- C-15—1st RF Alignment Capacitor
- C-16—3rd RF Alignment Capacitor
- C-17—Det. Alignment Capacitor
- C-18—Speaker Capacitor

TABLE OF SOCKET VOLTAGES

STAGE	TUBE	FIL.	PLATE	SCREEN	GRID	PLATE M.A.	
						Normal	Test
1st RF	224	2.0	170	75	3.5	3.0	5.00
2nd RF	224	2.0	170	75	3.5	3.0	5.00
3rd RF	224	2.0	170	75	3.5	3.0	5.00
Det.	224	2.0	50	15	1.0		
Audio	112-A	4.8	165		0.1	6.5	9

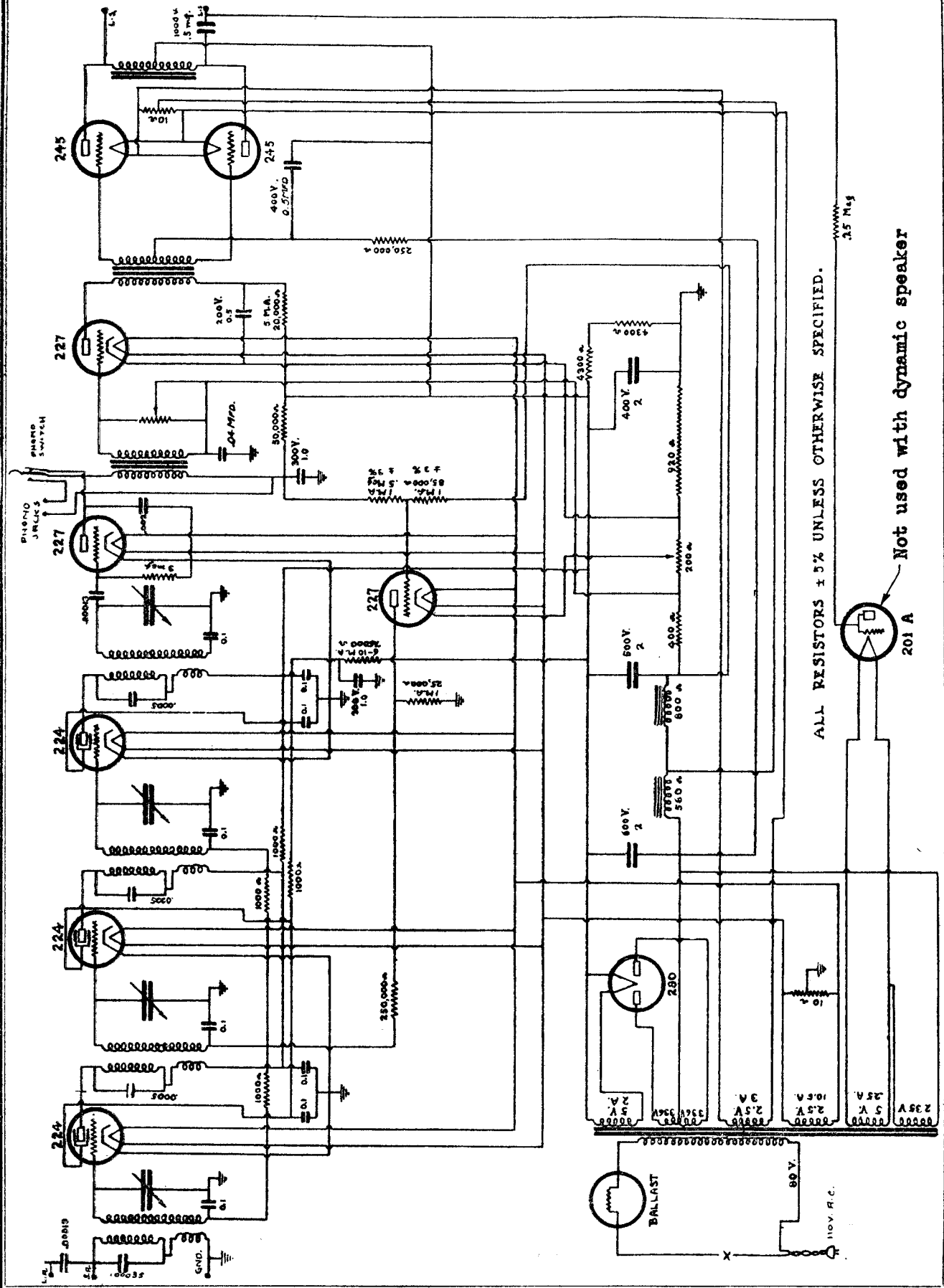
Models 80, 84 (1930)



FRONT

UNITED REPRODUCERS CORP.

MODEL 20 Series

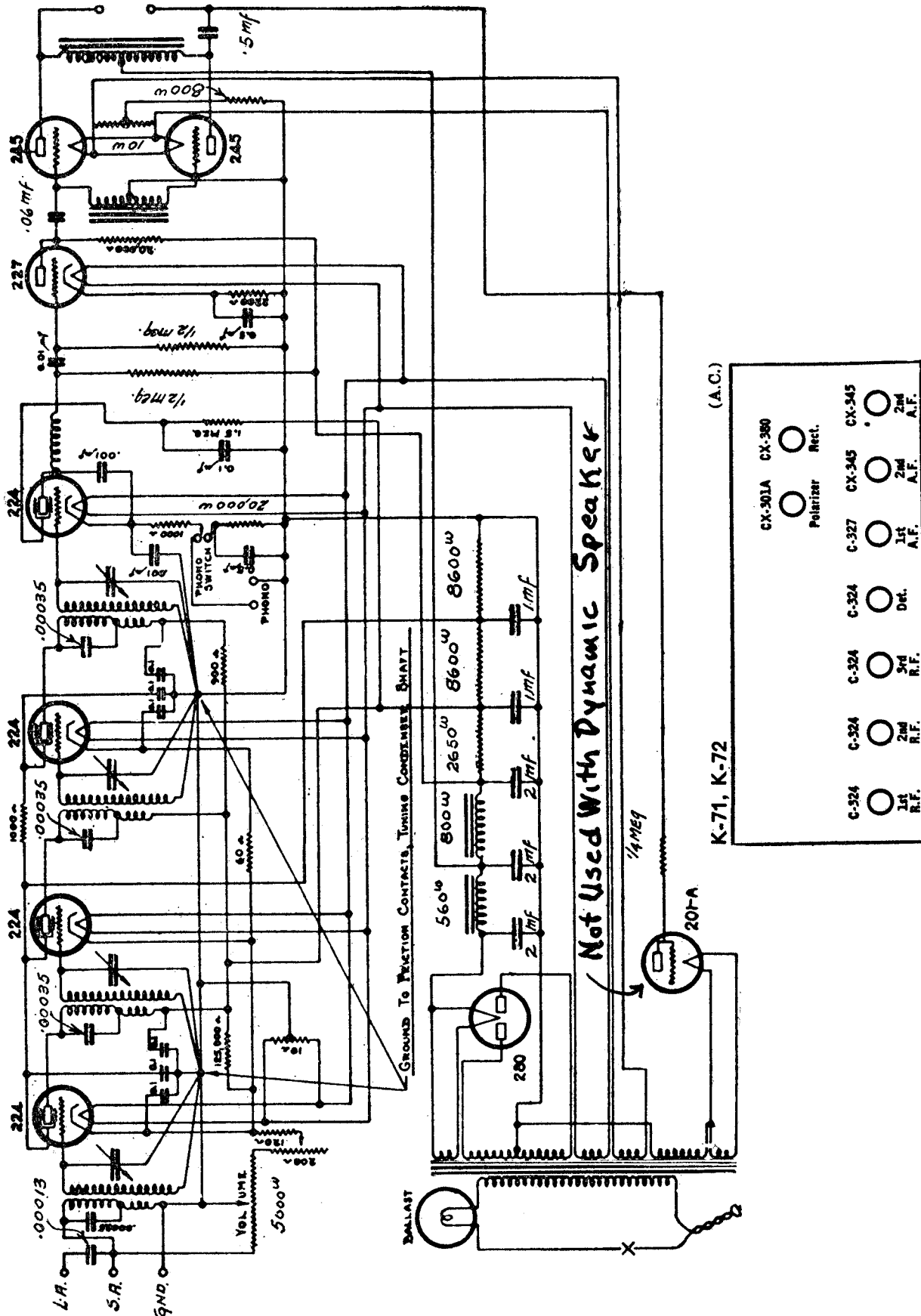


ALL RESISTORS ± 5% UNLESS OTHERWISE SPECIFIED.

Not used with dynamic speaker

MODEL 70 Series
(71,72)

UNITED REPRODUCERS CORP.



(A.C.)

K-71, K-72

CX-301A	CX-360
Polarizer	Rect.
C-324	C-324
1st R.F.	2nd A.F.
C-324	C-324
2nd R.F.	3rd R.F.
C-324	C-324
1st A.F.	2nd A.F.
CX-345	CX-345
1st A.F.	2nd A.F.

MODEL 20
Voltage - Data

U. S. RADIO & TELEVISION CORP.

**No. 20 CHASSIS—VOLTAGES AT SOCKETS—VOLUME CONTROL AT MAXIMUM
LINE VOLTAGE, 115—PLUG IN SOCKET OF RECEIVER—TUBE IN TEST SET**

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.5	196	2.2	85	1.4	2.2	5.	7.1
224	2	Detector	2.5	95 ⁽¹⁾	2.3 ⁽²⁾	17 ⁽³⁾	.015		.1	.2
171A	3	1st Audio	5.1	191	43. ⁽⁴⁾				18.	20.
280	4	Rectifier	5.1						23. Per Plate	

- (1) (3) Computed value. Reading with voltmeter will be lower.
- (2) This voltage read across 55 ohm section of shunt resistor.
- (4) This voltage read across 935 ohm section of speaker field and 55 ohm section of shunt resistor.

Tuning Condenser Alignment

The tuning condensers are aligned at the factory with oscillators and output meters and the receiver will not normally lose its alignment unless mishandled or tampered with. When the condenser is out of alignment one or more of the stages are not in resonance and the receiver may tune broadly, lack volume at certain parts of the broadcast band, or tune in a signal at two or more points of the dial.

The chassis should be grounded but the antenna disconnected. In case a strong enough signal is not being received from the oscillator, connect a five or six foot length of wire to the antenna post and run it over towards the oscillator.

First set the oscillator for a signal of 1,400 K.C. Then carefully tune to resonance by turning the tuning condenser rotor slowly back and forth until maximum output is obtained. Now adjust the trimmer condensers to resonance. Adjust the volume control until the pointer of the output meter is at about half scale. The oscillator signal should not be too great in intensity as distortion will be introduced. The trimmer condensers are adjusted by raising or lowering the center screw. Turn the screws down until the volume starts to drop. Then adjust the trimmers to resonance, raising or lowering the screws until maximum deflection is obtained. Adjustment may be made with a metal screw driver as the rotor is at ground potential.

An important point to remember in adjusting the trimmer condenser is that the screws should not be turned completely down. If they are screwed in too tightly the capacity of the trimmer

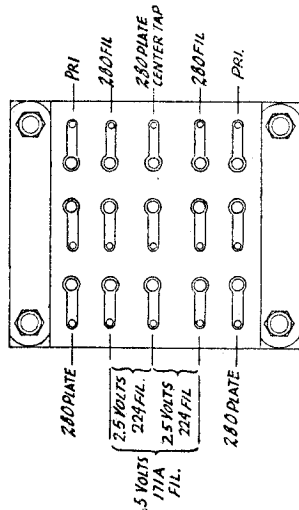
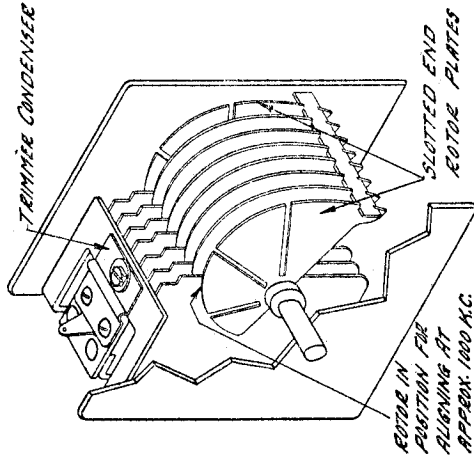
condenser which is added to the capacity of the tuning condenser will be so high that the receiver cannot be tuned to a high frequency signal.

After the trimmer condensers have been adjusted at 1,400 K.C., they should not be changed in any way when aligning the tuning condensers at different frequencies as explained below.

Next set the oscillator for a signal of 1,000 K.C. Then turn the tuning condenser rotor carefully until maximum deflection is obtained on output meter. The second slotted section of the rotor will be approximately half way in mesh with the stator as shown in Fig. 3. Bend this section of the two end rotor plates of the first section of the tuning condenser in or out until maximum reading is obtained on the output meter. Follow the same procedure with section two of the tuning condenser. The corresponding slotted section on both ends of any rotor section should be bent in or out about the same amount for each adjustment.

After each material adjustment of a slotted rotor plate section, the tuning or setting of rotor for resonance should be checked. In other words, after every bending turn the tuning knob back and forth until maximum deflection of output meter is obtained before proceeding to make the next adjustment.

Next tune in a signal at 750 K.C. Follow the same procedure. Lastly, tune in a signal at 600 K.C. and again follow the same procedure. The condenser will then be properly aligned.



CENTER ROW OF LUGS USED AS WIRING TERMINALS ONLY
Power Transformer Terminals

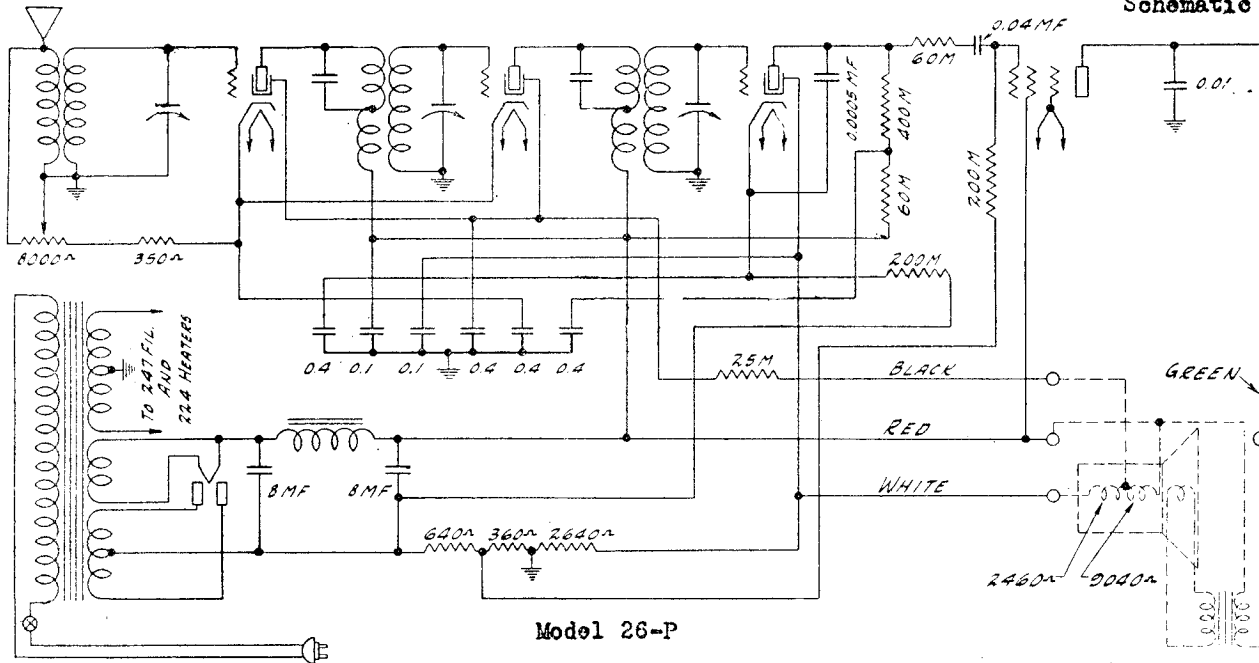
Electrodynamic Speaker

An especially designed electrodynamic speaker is supplied with the No. 20 chassis. The field of this speaker is energized by the power system of the chassis and is a part of the power system. For that reason no other speaker should be used with the No. 20 chassis than the one supplied with it.

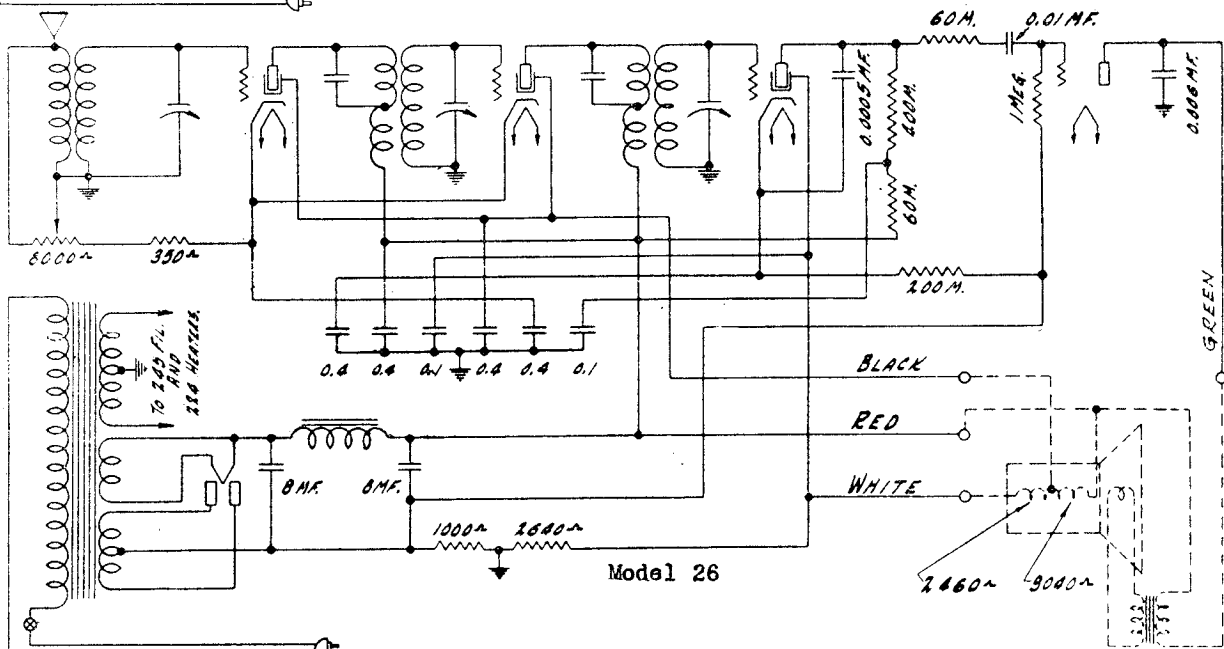
Care should be taken in servicing the No. 20 receiver not to reverse the leads to one of the field sections as the fields will then "buck" and low signal strength will result. The field winding also acts as a filter choke.

U. S. RADIO & TELEVISION CORP.

MODEL 26
Schematic
MODEL 26-P
Schematic



Model 26-P



Model 26

Type	Function	A	B	C	Screen	Plate Crnt.	
------	----------	---	---	---	--------	-------------	--

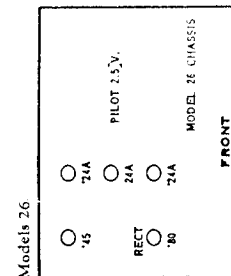
224	1st RF	2.2	245	2.5	80	2.9 ma	
224	2nd RF	2.2	245	2.5	80	2.9	
224	Det	2.2	130	3.	40	.25	Model 26
245	Audio	2.35	245	50.		28.	
280	Rect.	4.6				25.*	

* Per anode. Line voltage 115 . V.C.Max.

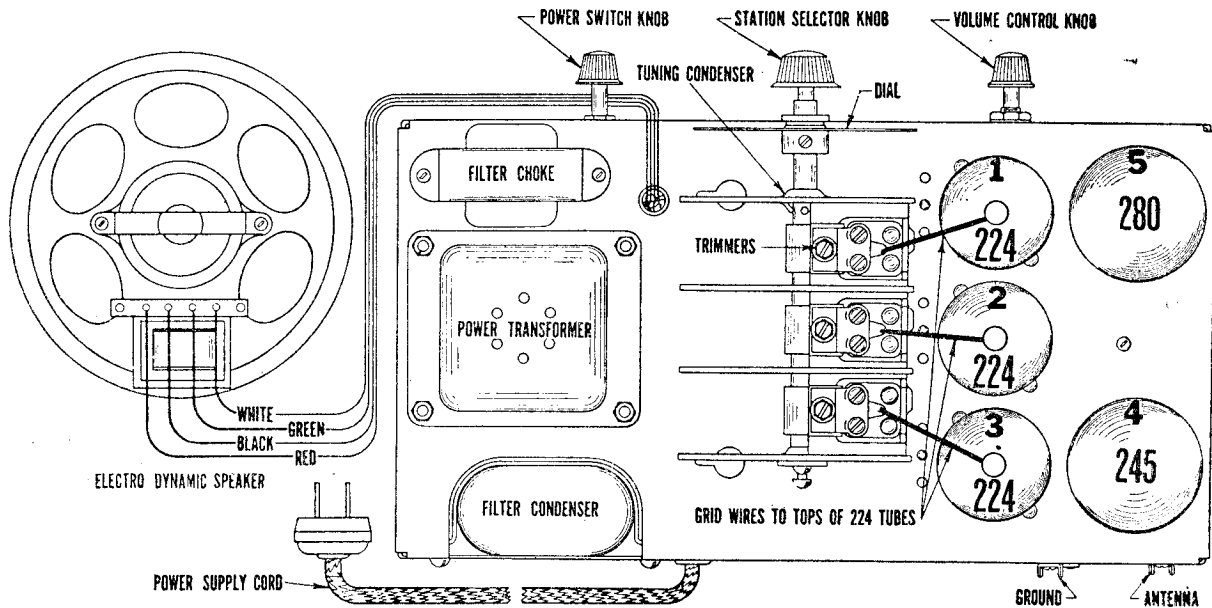
224	1st RF	2.2	250	2.	55."	2.1	
224	2nd RF	2.2	250	2.	55."	2.1	
224	Det.	2.2	130	2.8	40."	.25	Model 26-P
247	Audio	2.3	238	18.**	250	27.	
280	Rect.	4.65				28. *	

** Read across 360 ohms section of shunt resistor.

* Read with 250,000 ohm meter.



MODEL 26 Chassis
 MODEL 26-P Parts List U. S. RADIO & TELEVISION CORP.



--Top View of No. 26 Chassis showing Tube Sequence and Speaker Connections

No. 26P Chassis Replacement Parts (Supplementing No. 26 List)

The following parts are used in addition to the parts listed for the No. 26 chassis.

Part No.	Description	No. Used in Set	List Price Each
2757	Tube Socket—247.....	1	.35
705	25,000 ohm Series Resistor, Carbon.....	1	.50
1358	.04 Mfd. Coupling Condenser.....	1	.60
1751	200,000 ohm Grid Leak Resistor, Carbon.....	1	.50
2303A	Shunt Resistor, 640—360—2640 ohms.....	1	.60
2767	Resistor & Condenser Panel Assembly complete.....	1	3.00
2678	8 Mfd. Electrolytic Condenser Unit complete, Dry type.....	2	2.25
2752	Chassis Cover Plate for Electrolytic Condensers.....	1	.15
2691	Mounting Plate for Electrolytic Condensers.....	1	.15
2763	Electrolytic Condenser Assembly complete, 2 Units and Mounting Plate.....	1	4.65
2756	Power Transformer, 115 Volt, 60 Cycles.....	1	7.50
2768	Chassis Harness.....	1	1.00
2771	Bottom Plate.....	1	.40
2758	Baffle Mtg. D.C. Electrodynamic Speaker for No. 26P Chassis.....	1	8.50
2796	Transformer for Speaker.....	1	3.50

The following parts listed for the No. 26 Chassis are not used in the No. 26P Chassis:

685	Tube Socket—245.....	1	.35
1612	.006 Mfd. Audio Plate By-pass Condenser.....	1	.80
2266	1 Megohm Grid Leak Resistor.....	1	.45
2303	Shunt Resistor, 1000—2640 ohms.....	1	.60
2316	Resistor & Condenser Panel Assy. complete.....	1	3.00
1942	8 Mfd. Electrolytic Condenser Unit.....	2	2.50
2223	Mounting Clamp for Electrolytic Condensers.....	1	.20
2328	Metal Cap for Electrolytic Condensers.....	1	.15
2251	Power Transformer, 115 Volts, 60 Cycles.....	1	7.50
2238	Cover Plate for Power Transformer.....	1	.30
2318	Chassis Harness.....	1	1.20
2467	Baffle Mtg. D.C. Electrodynamic Speaker No. 26 Chassis.....	1	8.50
2555	Transformer for Speaker.....	1	3.50

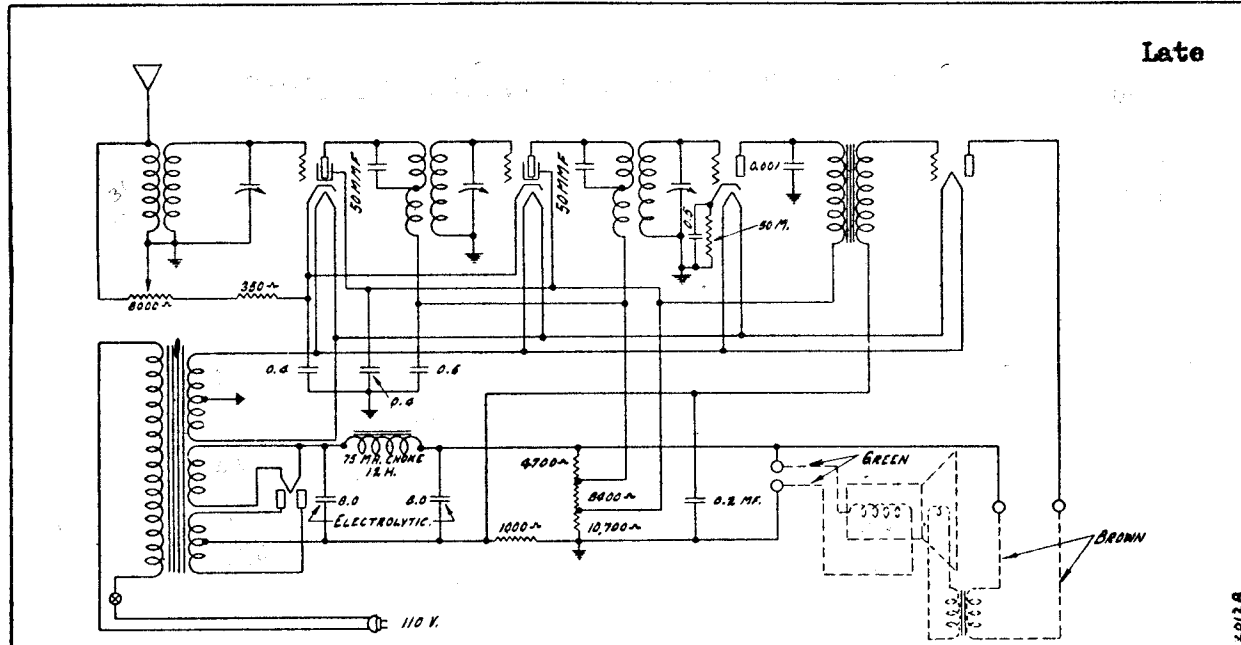
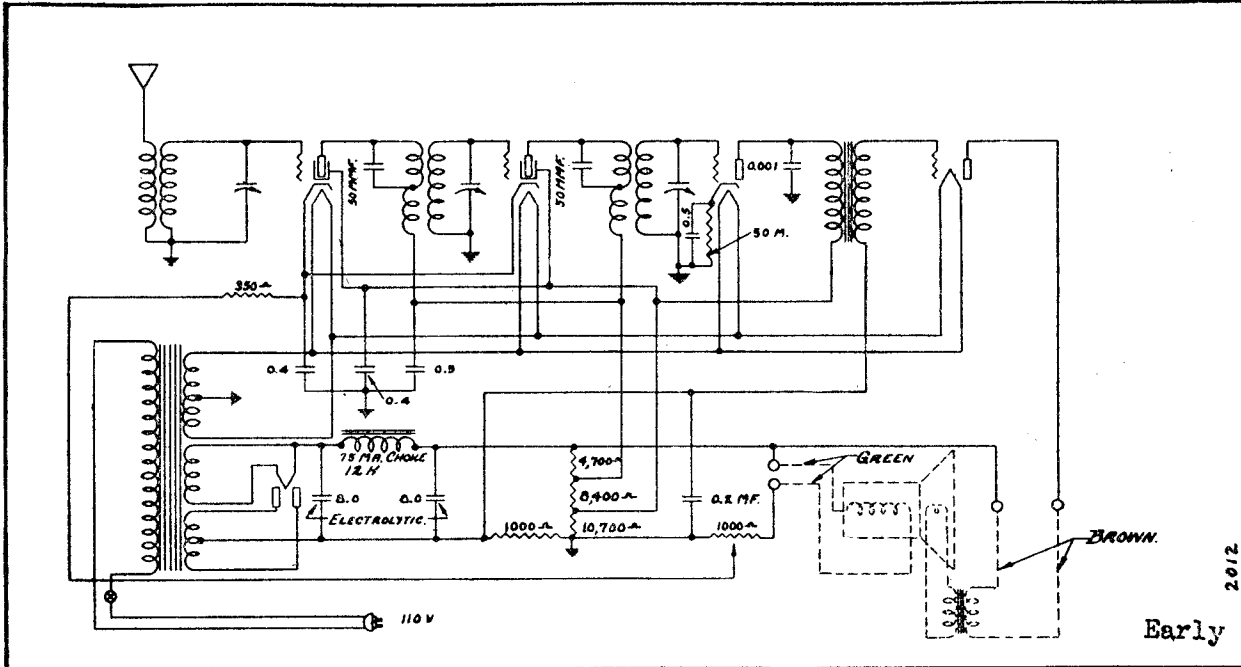
Making Pentode Current and Voltage Readings

Reading	Terminals	Meter
A Volts	Across filament terminals	0-4 A.C. Voltmeter
B Volts	Plate terminal to subpanel	0-300 D.C. Voltmeter
C Volts	Across 360 ohm resistor	0-50 D.C. Voltmeter
Screen Volts	Screen grid terminal to subpanel	0-300 D.C. Voltmeter
Screen M.A.	Insert milliammeter in screen grid line	0-25 D.C. Milliammeter
Plate M.A.	Insert milliammeter in plate line	0-50 D.C. Milliammeter

CAUTION:—Never operate the Pentode tube under any circumstances without plate voltage. This condition may arise if one of the speaker leads is disconnected opening the line to the primary of the output transformer. Without plate voltage the screen grid will become white hot due to the excessive current flowing through it and may become distorted or may evolve gas. Care should be taken, therefore, in servicing the No. 26P chassis or conducting experiments with the Pentode never to have this condition arise.

U. S. RADIO & TELEVISION CORP.

MODEL 27 (Early)
Schematic
MODEL 27 (Late)
Schematic



VOLTAGES AT SOCKETS — VOLUME CONTROL AT MAXIMUM —
LINE VOLTAGE, 115 — PLUG IN SOCKET OF RECEIVER —
TUBE IN TEST SET

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
224	2	2nd Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
227	3	Detector	2.25	70	8.5			8.5	.1	.2
245	4	Audio	2.35	238	44.				19.	22.
280	5	Rectifier	4.8						26.5 per Plate	

Model Apex 27 Series (1929)

MODEL 27 CHASSIS

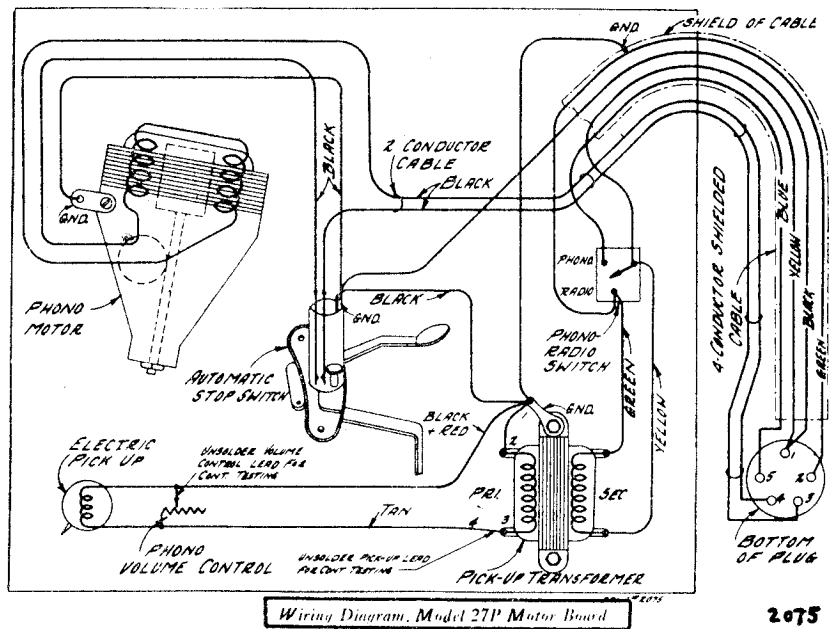
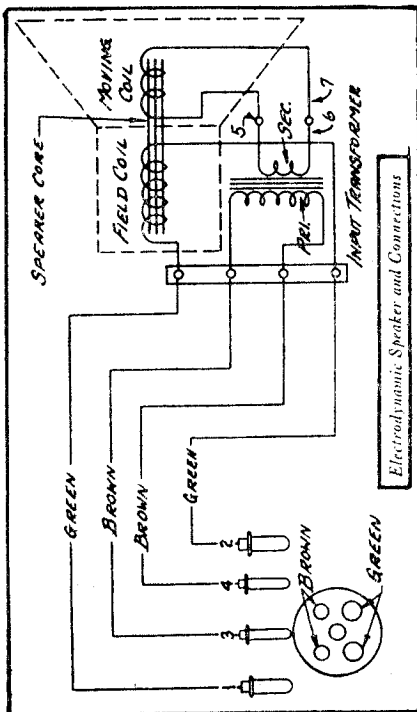
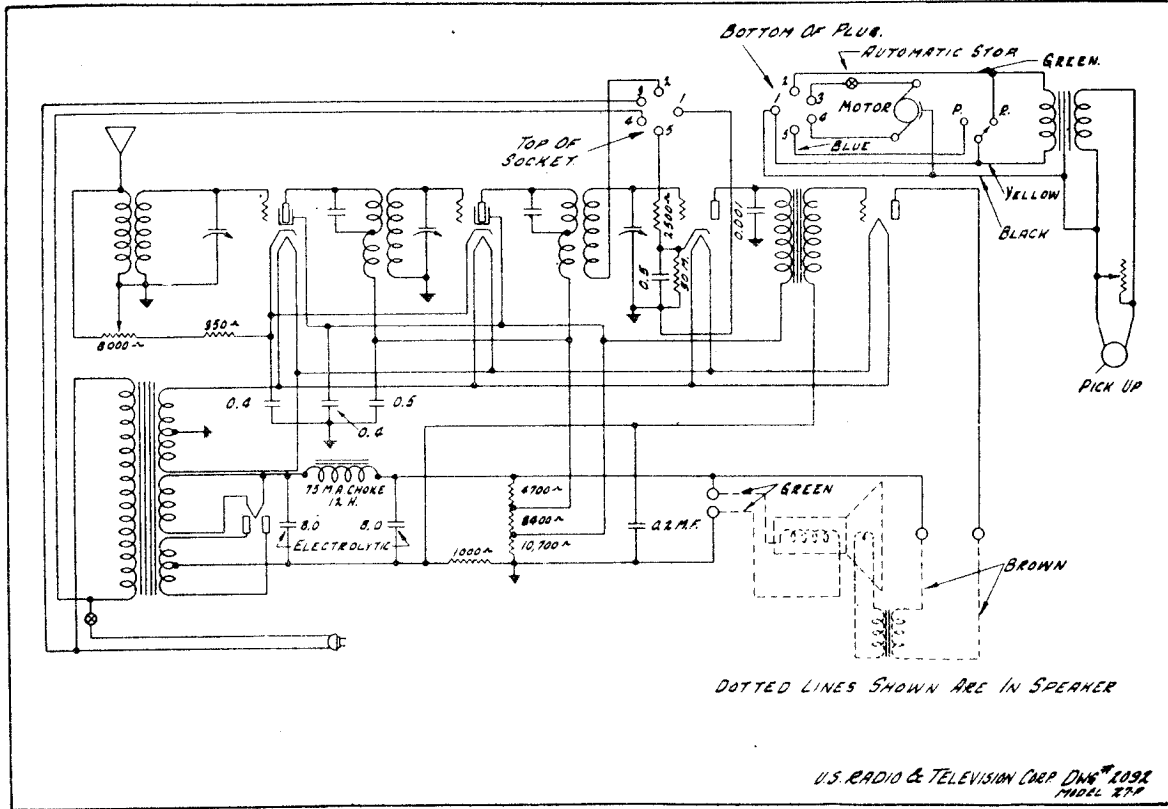
FRONT

PILOT 2.5 V.

- RECT
- 10
- 24A
- 24A
- 27
- 45

MODEL 27-P
Schematic
Motor Board
Schematic

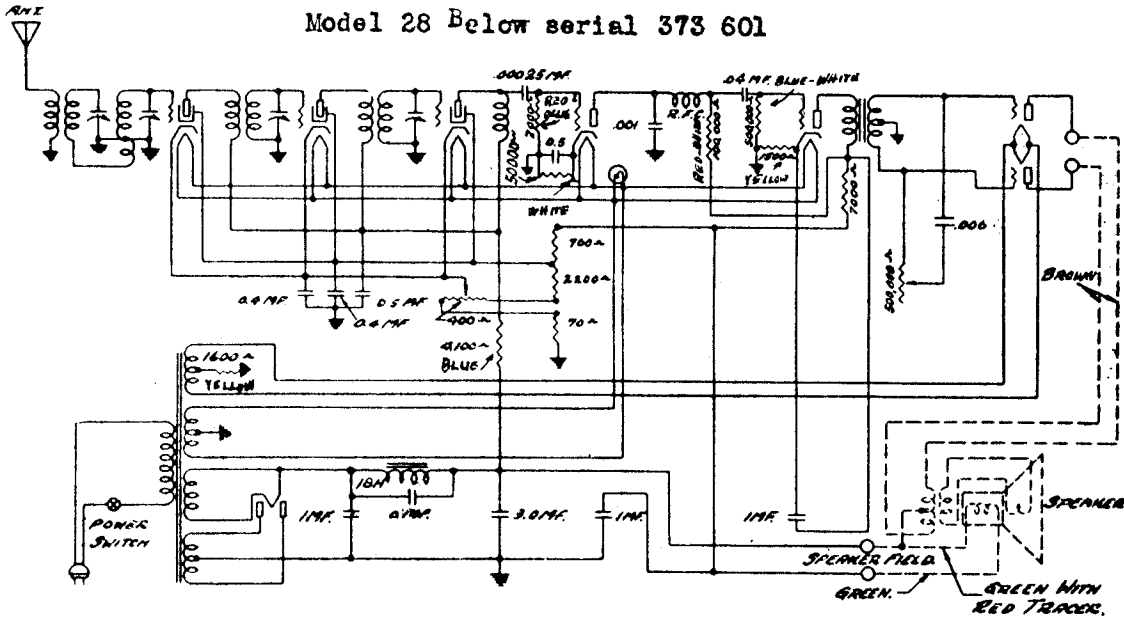
U. S. RADIO & TELEVISION CORP.



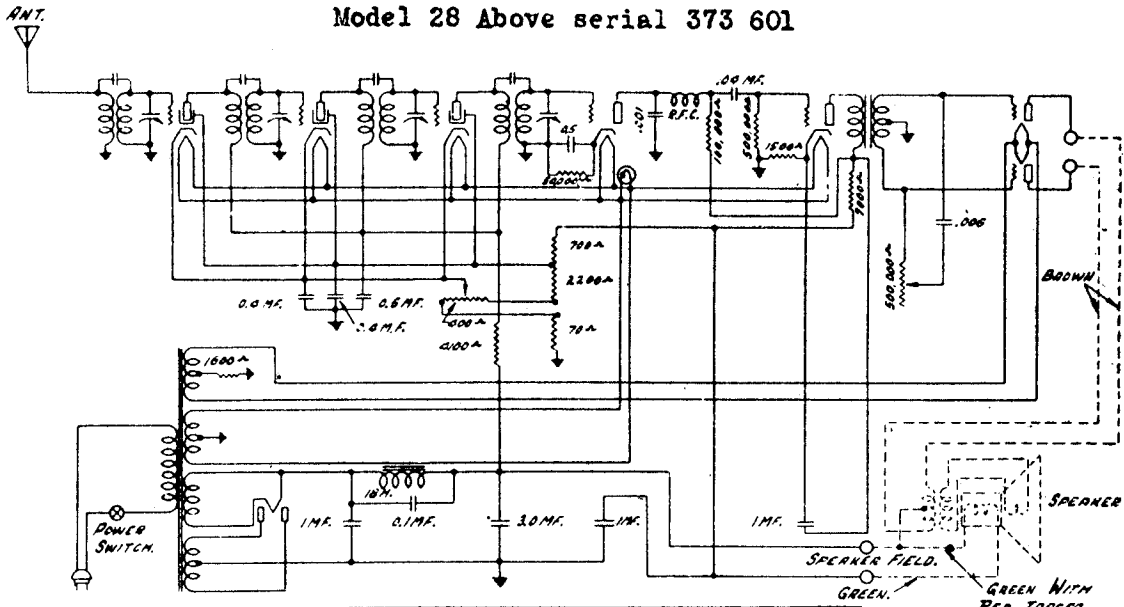
U. S. RADIO & TELEVISION CORP.

MODEL 28 (Early)
 MODEL 28 (Late)
 Schematics
 Voltage

Model 28 Below serial 373 601



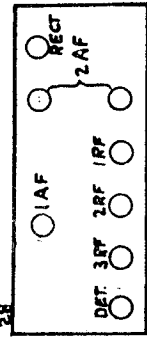
Model 28 Above serial 373 601



VOLTAGES AT SOCKETS — VOLUME CONTROL AT MAXIMUM —
 LINE VOLTAGE, 115 — PLUG IN SOCKET OF RECEIVER —
 TUBE IN TEST SET

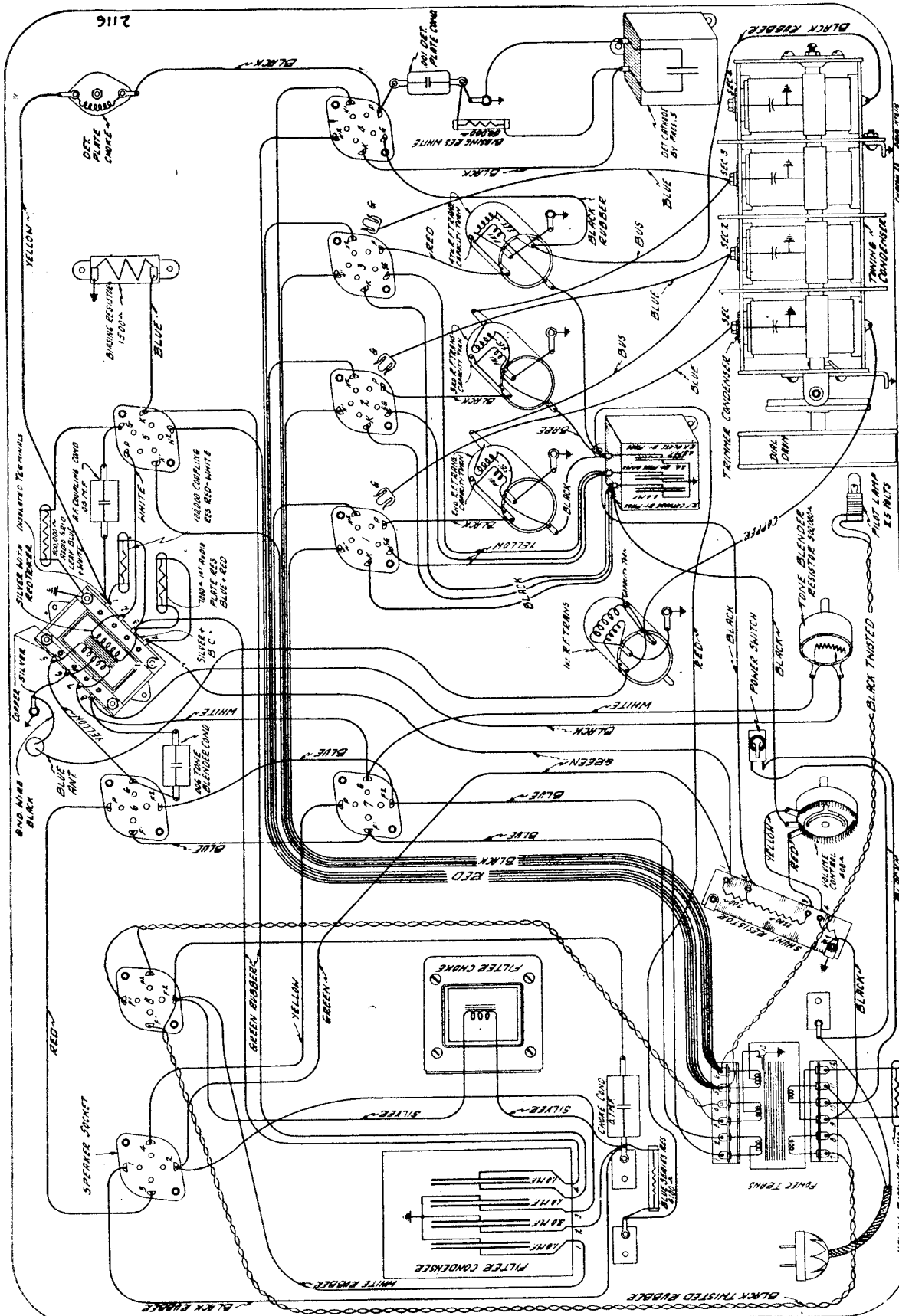
DOTTED LINES
 SHOWN ARE IN SPEAKER.

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.25	180	3.0	90	.6	3.0	3.4	5.8
224	2	2nd Radio	2.25	180	3.0	90	.6	3.0	3.4	5.8
224	3	3rd Radio	2.25	180	3.0	90	.6	3.0	3.4	5.8
227	4	Detector	2.25	60	8			8	.2	3
227	5	1st Audio	2.25	90	6			6	3.5	4.5
245	6	2nd Audio	2.35	185	40				12.5	15.0
245	7	2nd Audio	2.35	185	40				12.5	15.0
280	8	Rectifier	5.0						38	
									Per Plate	

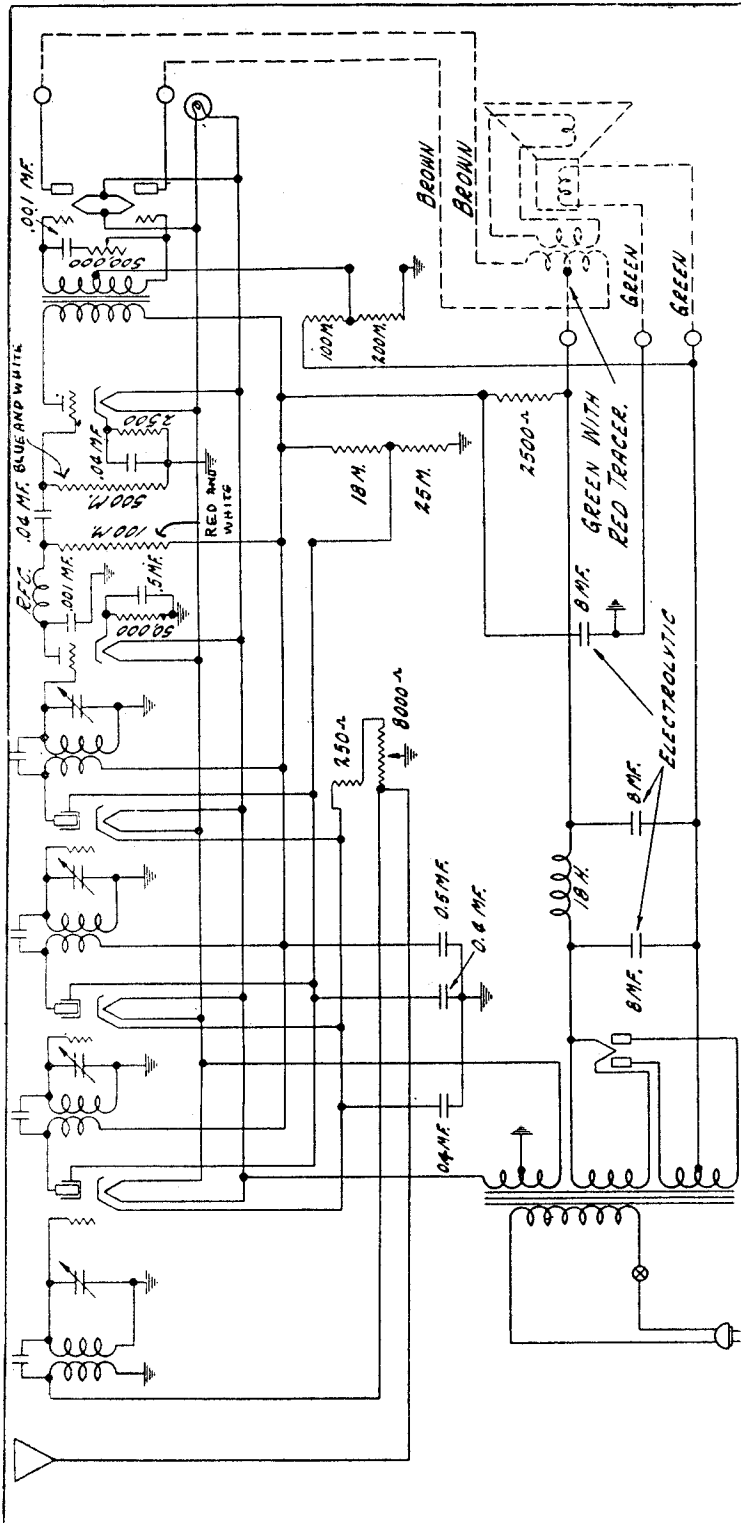


MODEL 28
Chassis

U. S. RADIO & TELEVISION CORP.



U. S. RADIO & TELEVISION CORP.



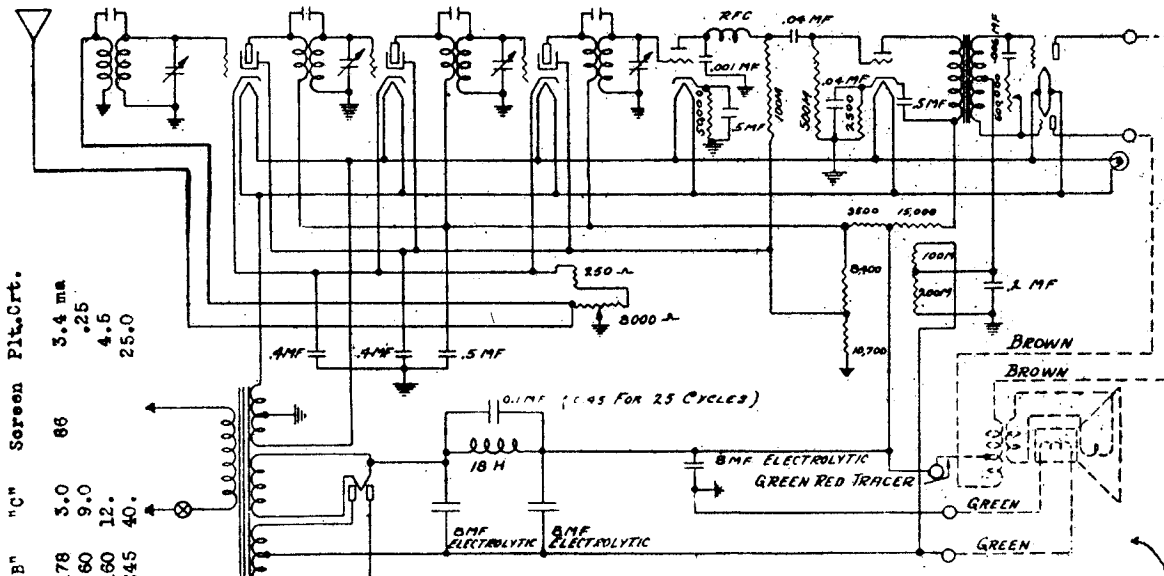
**No. 29 CHASSIS—VOLTAGES AT SOCKETS—VOLUME CONTROL AT MAXIMUM
LINE VOLTAGE, 115—PLUG IN SOCKET OF RECEIVER—TUBE IN TEST SET**

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.25	205	3.	90	.55	3.	3.4	6.3
224	2	2nd Radio	2.25	205	3.	90	.55	3.	3.4	6.3
224	3	3rd Radio	2.25	205	3.	90	.55	3.	3.4	6.3
227	4	Detector	2.25	140	13.			13.	.35	.45
227	5	1st Audio	2.25	190	13.			13.	5.3	6.5
245	6	2nd Audio	2.35	255	43.				26.	31.
245	7	2nd Audio	2.35	255	43.				26.	31.
280	8	Rectifier	4.9						37.	

Per Plate

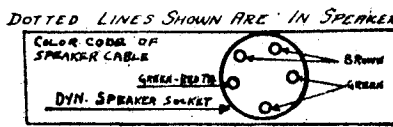
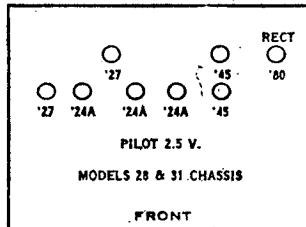
U. S. RADIO & TELEVISION CORP.

MODEL Apex 31
MODEL 31-R

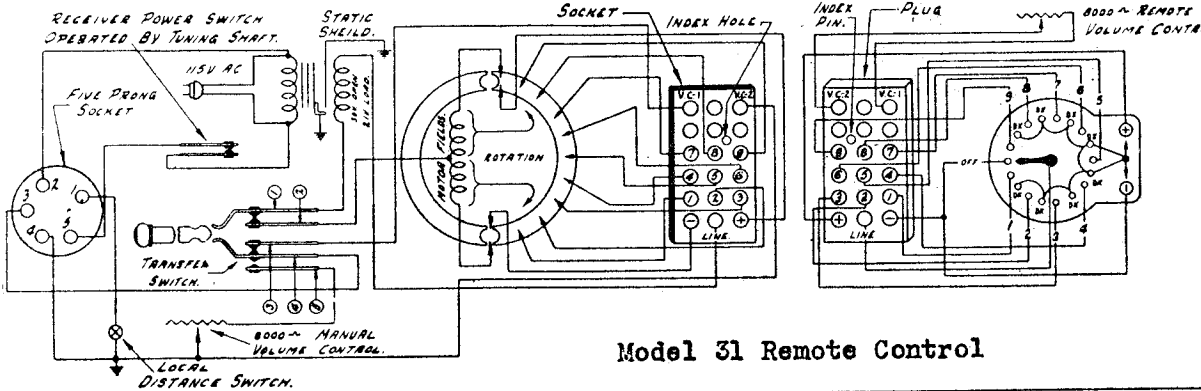
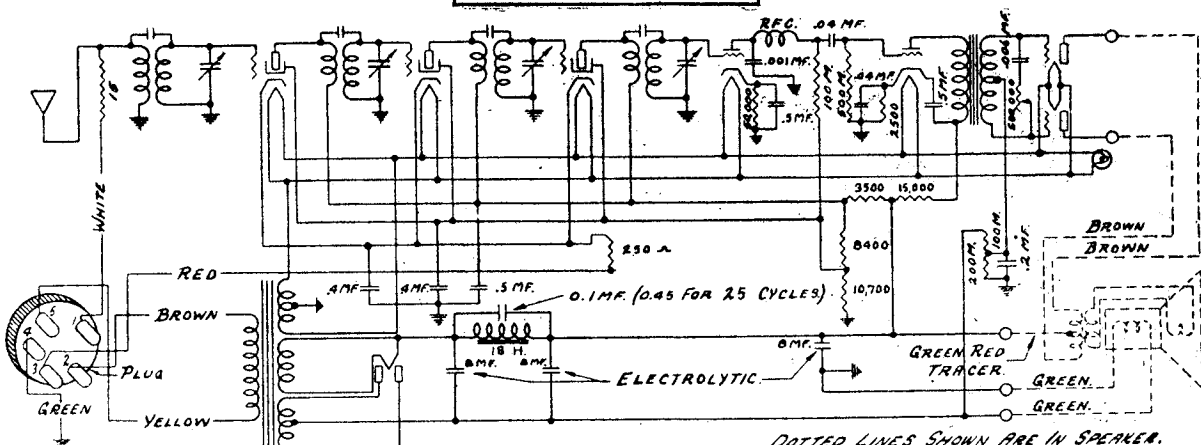


Tube "A"	2.25 178	3.0 86
Tube "B"	2.25 60	2.25 60
Tube "C"	2.25 160	2.25 60
Screen Plt. Crt.	2.35 245	25.0 3.4 ma
	2.35 245	25.0 3.4 ma
		25.0 3.4 ma
		25.0 3.4 ma

Models Apex 28A, 31 Series (1929)



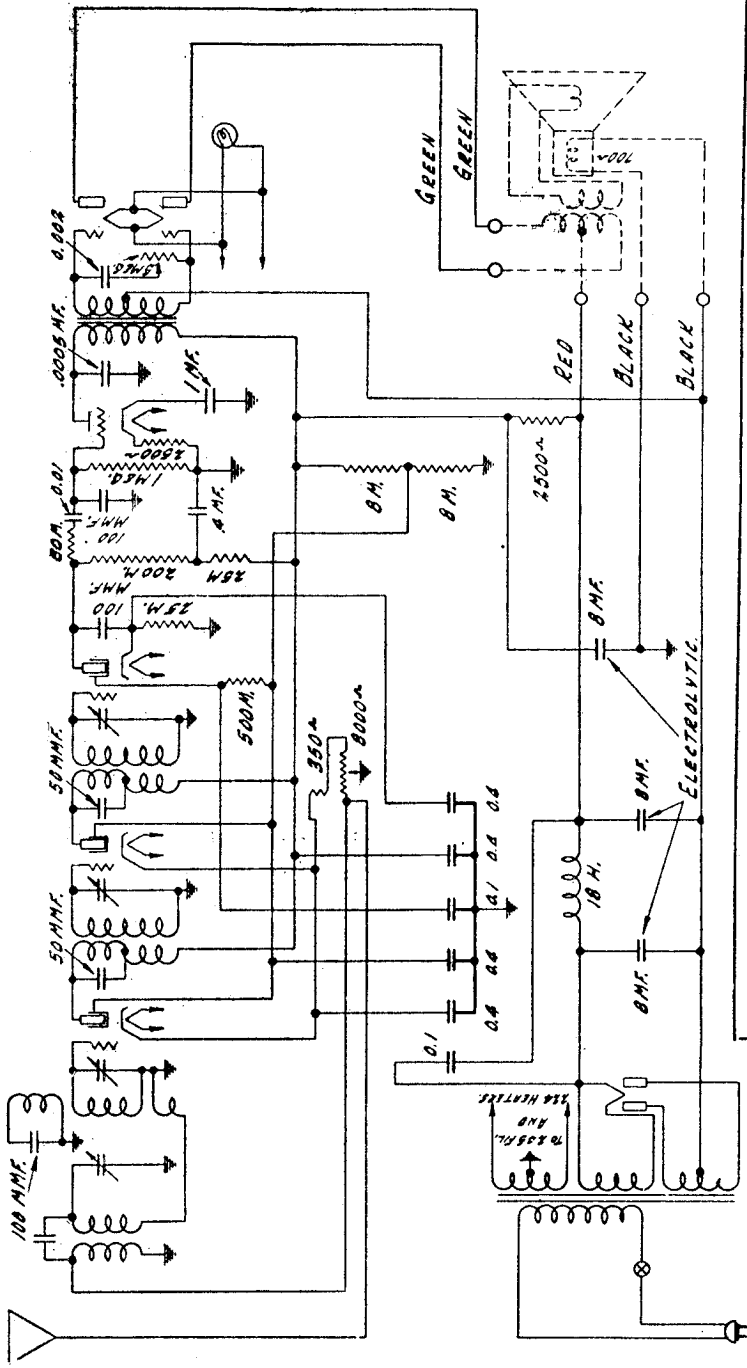
Model Apex 31



Model 31 Remote Control

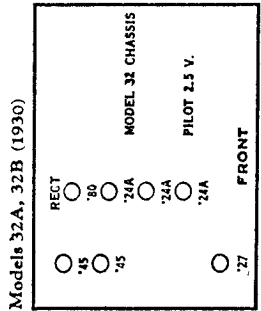
MODEL 32 Series

U. S. RADIO & TELEVISION CORP.



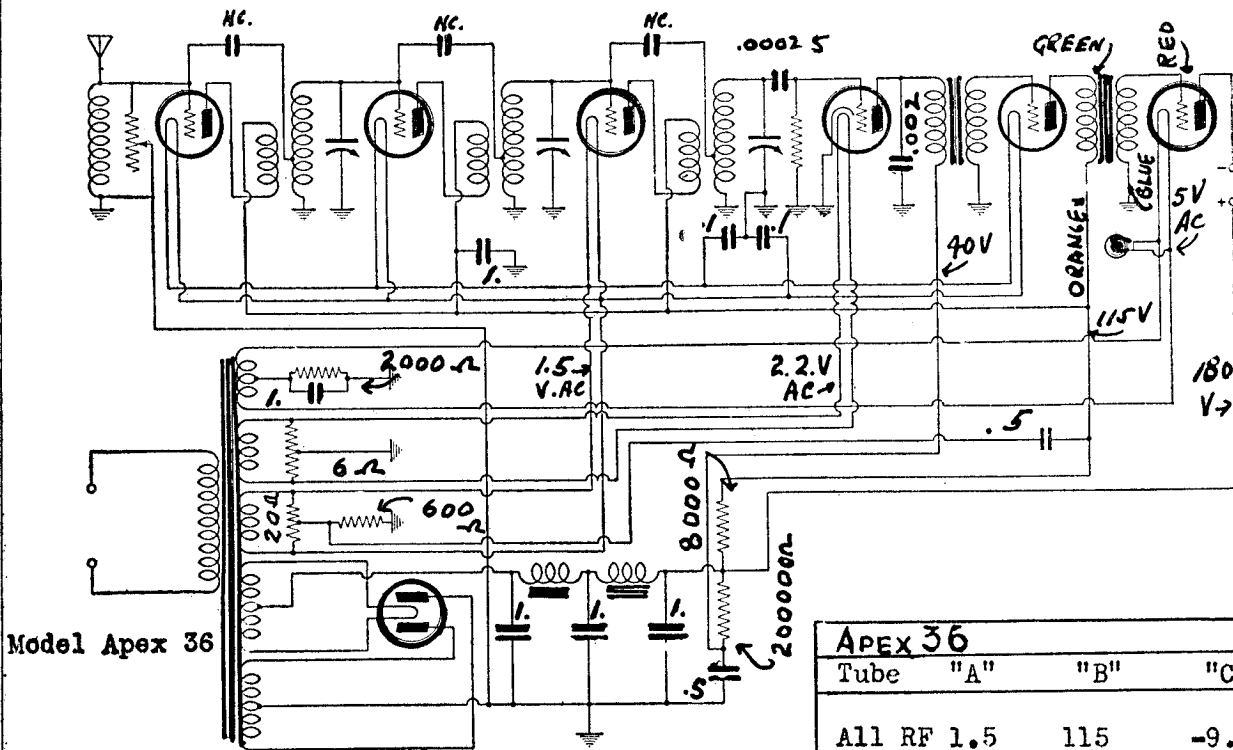
**No. 32 CHASSIS—VOLTAGES AT SOCKETS—VOLUME CONTROL AT MAXIMUM
LINE VOLTAGE, 115—PLUG IN SOCKET OF RECEIVER—TUBE IN TEXT SET**

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	"C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.3	198	3.	.88	.9	3.	3.5	6.
224	2	2nd Radio	2.3	198	3.	.88	.9	3.	3.5	6.
224	3	Detector	2.3	150	6.	.45	.1	6.	.25	.4
227	4	1st Audio	2.3	180	12.5			12.5	5.	6.1
245	5	2nd Audio	2.4	255	55.				26.	31.
245	6	2nd Audio	2.4	255	55.				26.	31.
280	7	Rectifier	5.						36.	31.



U. S. RADIO & TELEVISION CORP.

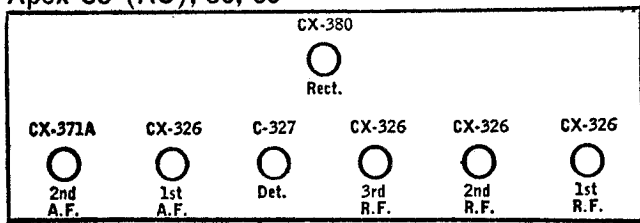
MODEL Apex 36
MODEL Apex 37



Model Apex 36

Apex 36 (AC), 50, 60

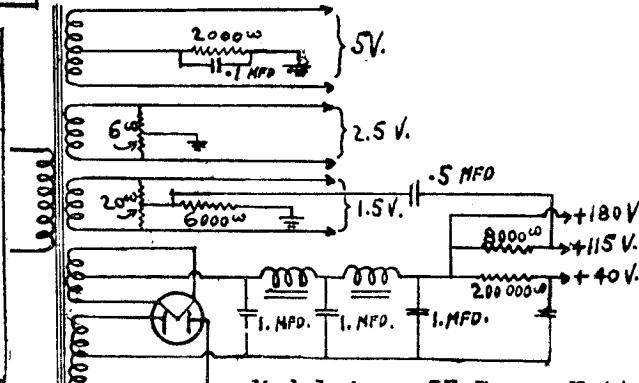
(A.C.)



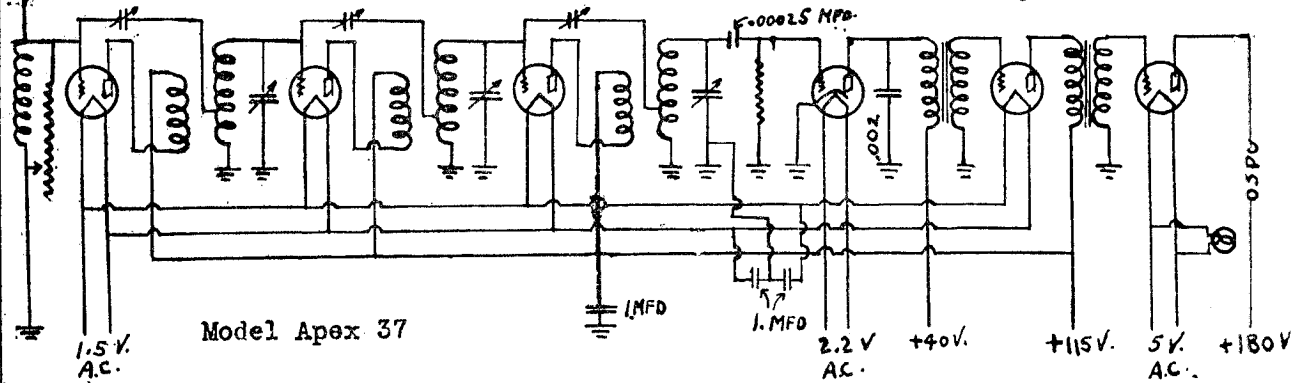
APEX 36			
Tube	"A"	"B"	"C"
All RF	1.5	115	-9.
Det	2.2	26	-
1AF	1.5	105	-9.
2AF	4.9	182	-37.
Rect	4.9		
Speaker terminals shorted			
Line voltage 115 volts			

Model 37. Line-115 V. (L.S.Coil shorted.)

Tube Type	Stage	Fil. Volts	Plate Volts	Grid Volts	Plate Ma.
'26	1 RF	1.5	115	9.	5.5
'26	2 RF	1.5	115	9.	5.5
'26	3 RF	1.5	115	9.	5.5
'27	Det.	2.2	25	---	1.5
'26	1 AF	1.49	105	9.	5.
'71-A	2 AF	5.	180	36.	20.
'71-A	2 AF	5.	180	36.	20.
'80	Rect	4.9			



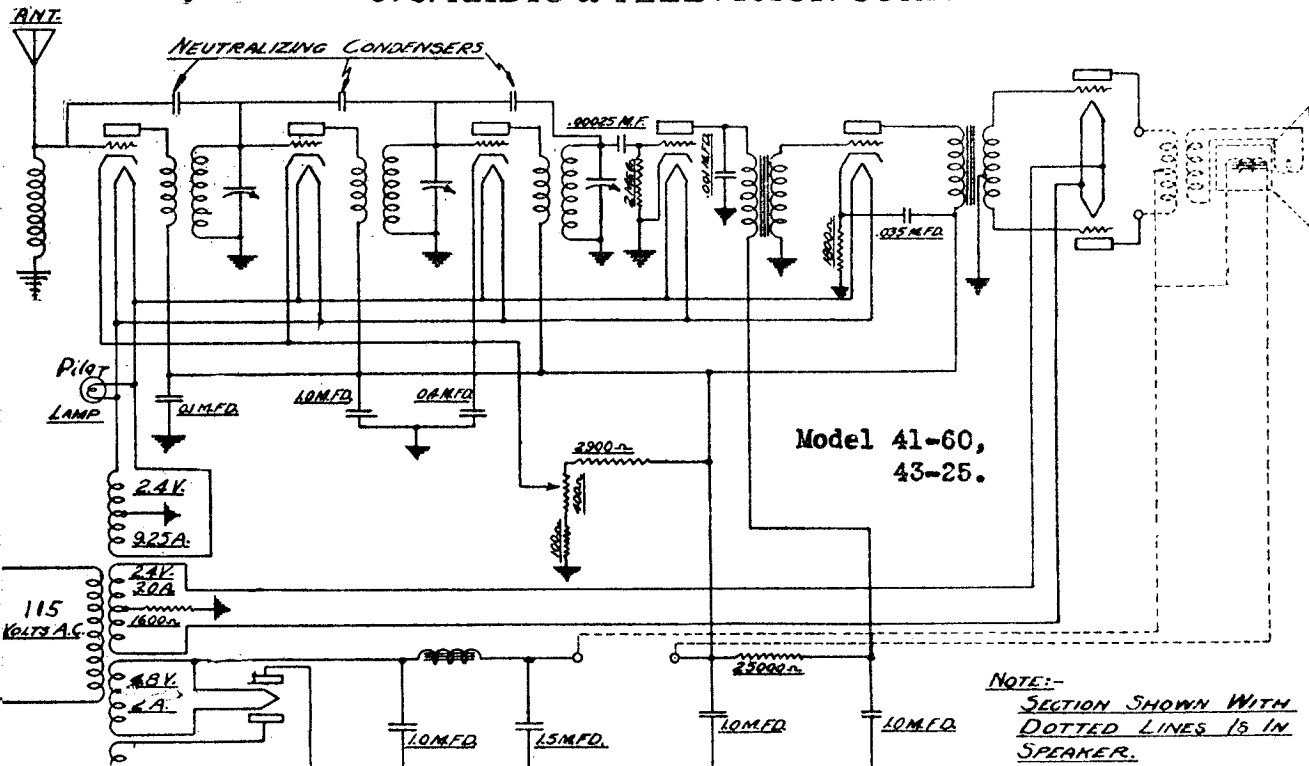
Model Apex 37 Power Unit



Model Apex 37

MODEL 41-60, 43-25
MODEL 42-60, 44-25

U. S. RADIO & TELEVISION CORP.

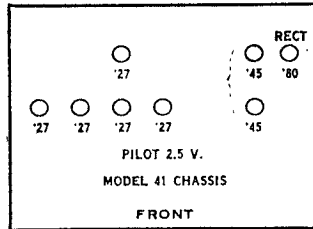


Model 41-60,
43-25.

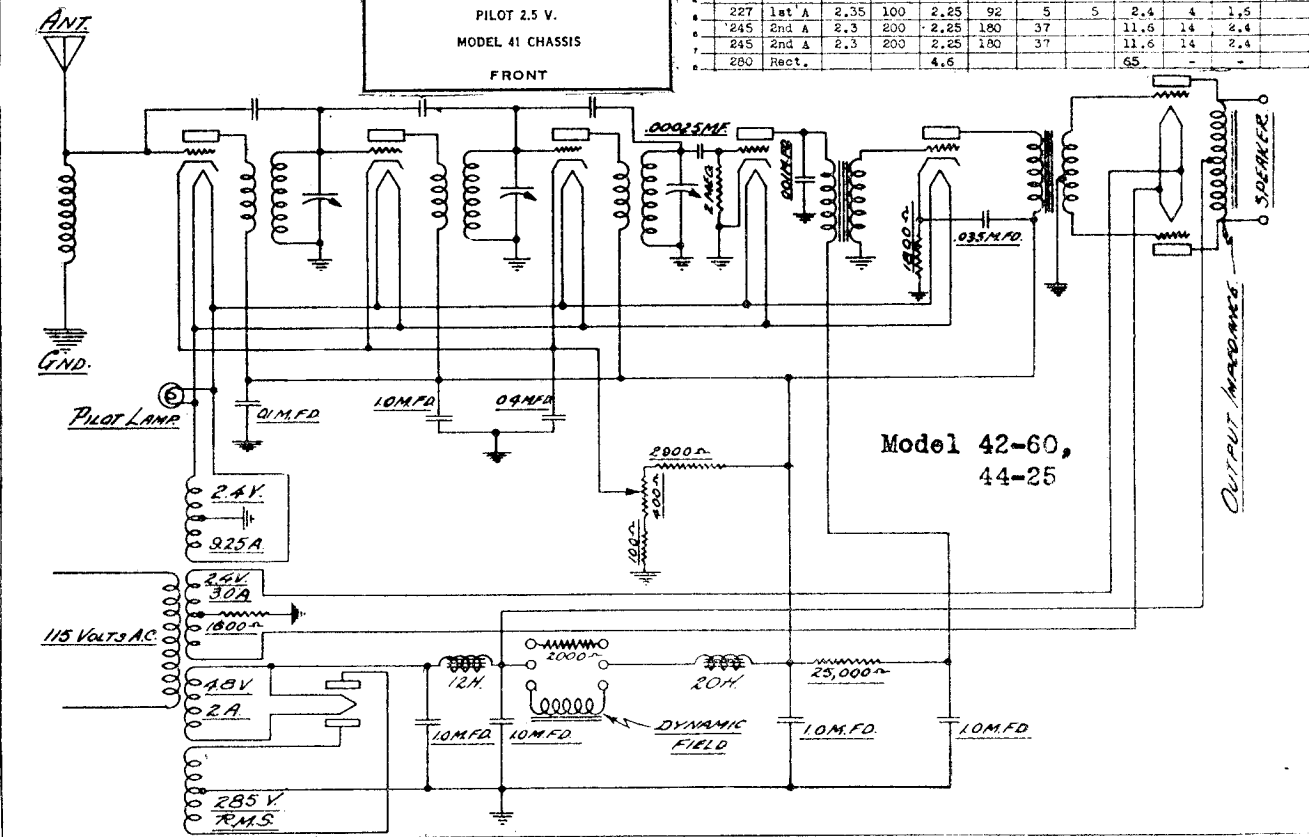
NOTE:-
SECTION SHOWN WITH
DOTTED LINES IS IN
SPEAKER.

U. S. RADIO & TELEVISION—Model 41-60 Cycle
Line Voltage 110—Volume Control Position Max

Models Apex 41, 42, 43, 44, 60, 60A (1929)



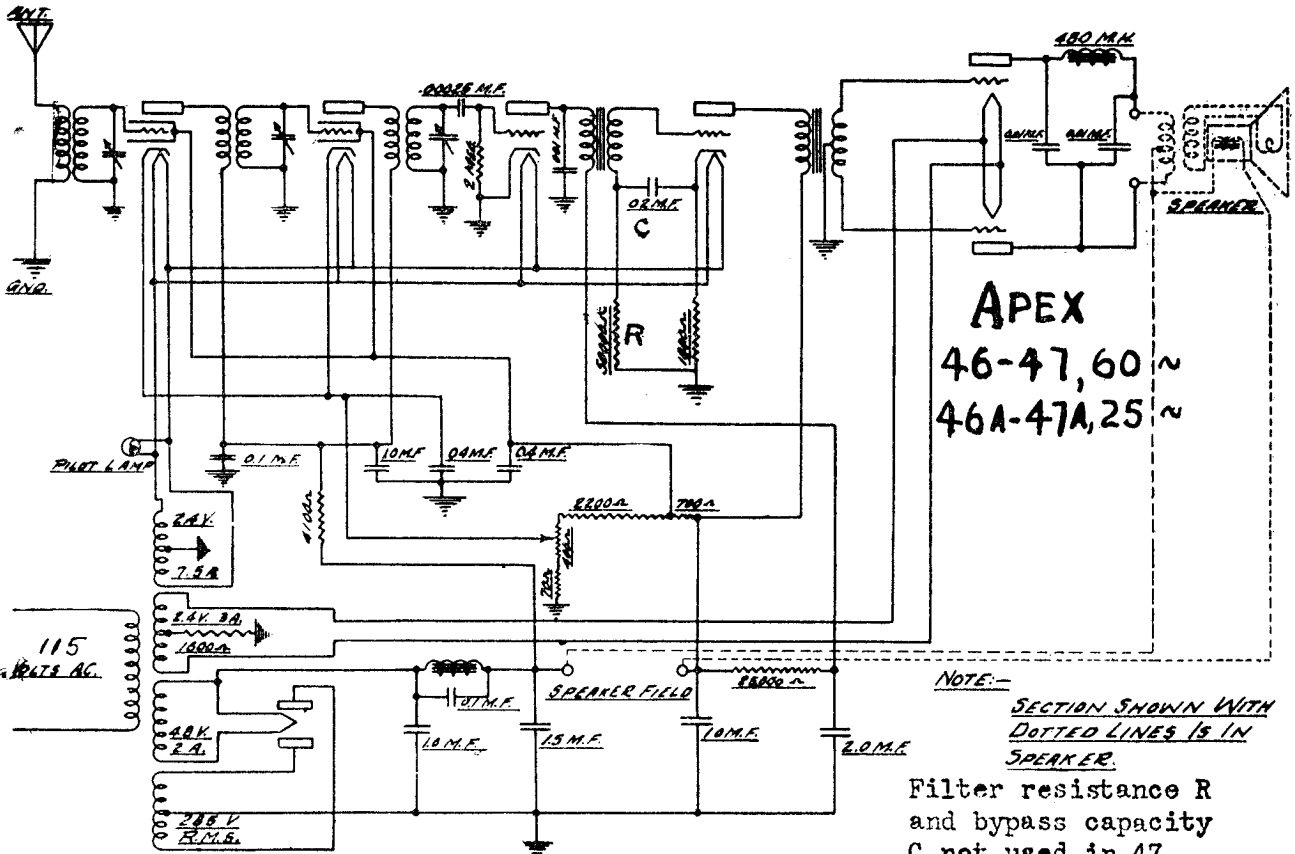
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st, 2nd, 3rd, etc.	TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL HEATER VOLTS	PLATE (IM A GRID) VOLTS	PLATE (IM A GRID) CHANGE TEST VOLTS	SCREEN GRID VOLTS
1	227	1st RF	2.3	100	2.25	100	4	4	4.5	9	4.4	
2	227	2nd RF	2.3	100	2.25	100	4	4	4.5	9	4.4	
3	227	3rd RF	2.35	100	2.25	100	4	4	4.5	9	4.4	
4	227	Det.	2.35	100	2.25	40	-	-	2.4	-	-	
5	227	1st A	2.35	100	2.25	92	5	5	2.4	4	2.5	
6	245	2nd A	2.3	200	2.25	180	37	-	11.6	14	2.4	
7	245	2nd A	2.3	200	2.25	180	37	-	11.6	14	2.4	
8	280	Rect.	-	-	4.6	-	-	-	65	-	-	



Model 42-60,
44-25

OUTPUT WINDINGS
SPEAKER

U. S. RADIO & TELEVISION CORP. MODEL 46,47 Apex
MODEL 46-A,47-A Apex



APEX
46-47, 60 ~
46A-47A, 25 ~

NOTE:—
SECTION SHOWN WITH
DOTTED LINES IS IN
SPEAKER.

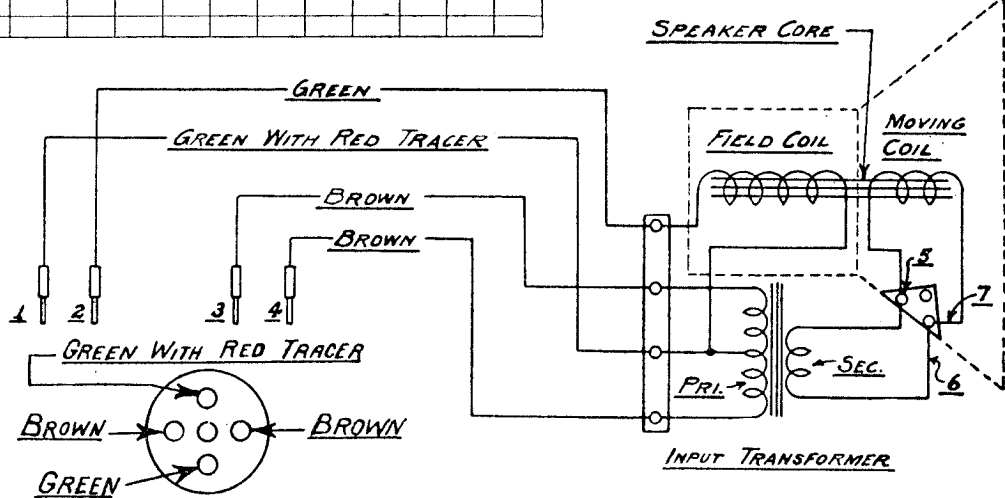
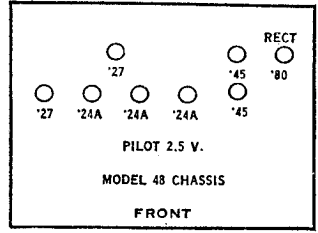
Filter resistance R
and bypass capacity
C not used in 47
and 47A

46 and 46-A

U. S. RADIO & TELEVISION—Models 47 and 47A

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES						MILLIAMPERES		
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID - SPACE	NORMAL GRID - SCREEN	CATHODE TO HEATER	SCREEN GRID TO PLATE	PLATE TO PLATE	TUBE TEST	PLATE CURRENT	PLATE CHARGE
1	224	1 R.F.	2.35	173	2.72	86	2.72	.87	3.0		
2	224	2 R.F.	2.31	173	2.72	86	2.72	.21	3.0		
3	227	Det.	2.28	35	-	0	-	-	2.8		
4	227	1 A.F.	2.28	100	-	6.1	-	-	3.25		
5	245	2 A.F.	2.29	169	-	38	-	-	11.3		
6	245	2 A.F.	2.29	169	-	38	-	-	11.3		
7	280	Rect.	4.61	-	-	-	-	34.5	34.5		
8											
9											
10											

Models Apex 11,11A,14,14A,46,47 (New Type) ('29)

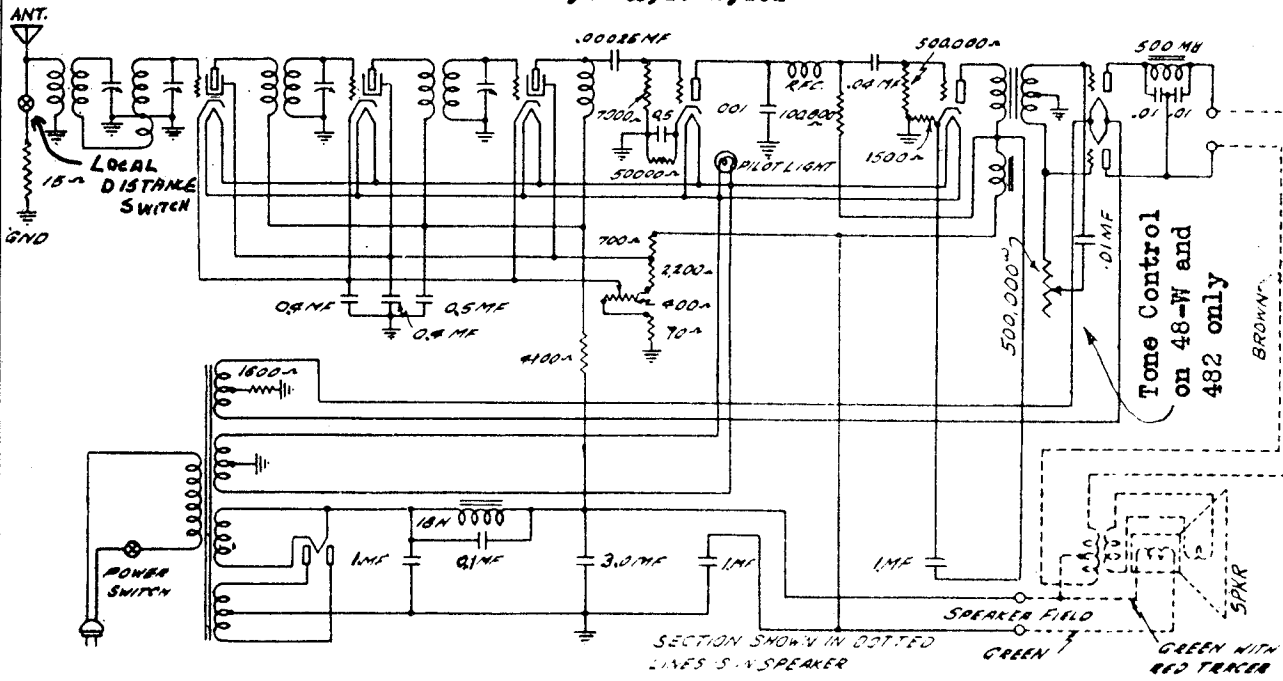


—Electrodynamic Speaker and Connections

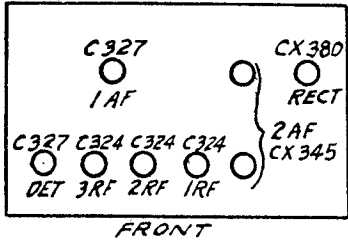
MODEL 48, 48-A, 48-W,
482.

U. S. RADIO & TELEVISION CORP.

Model 48, 48-A, 48-W, 482

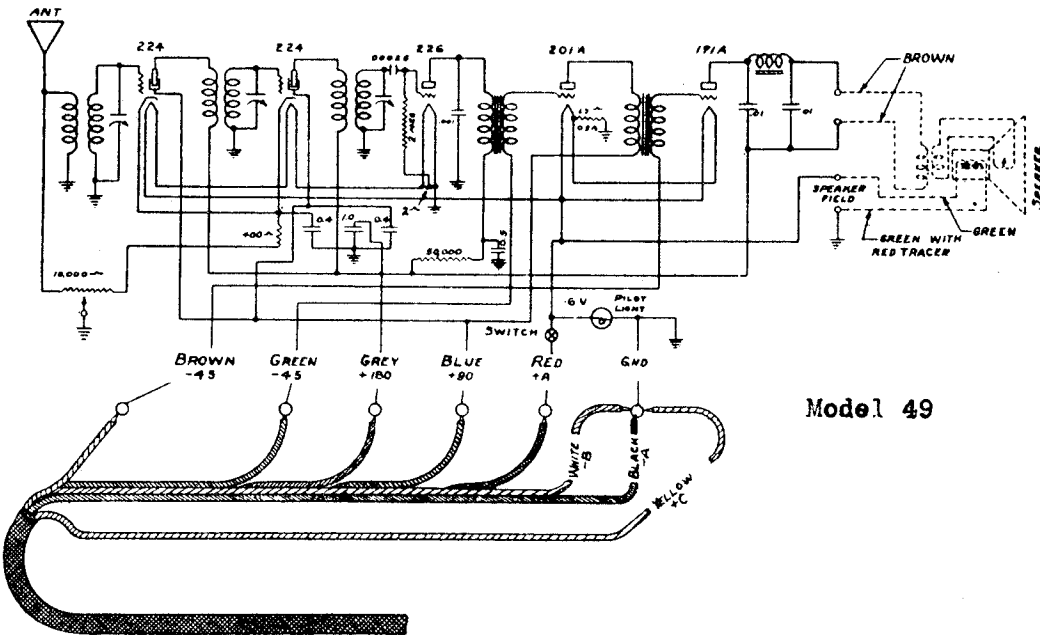


48, 48-A



U. S. RADIO & TELEVISION—Models 48-48A
Line Voltage 115—Volume Control Maximum

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES							METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET	
			FILAMENT OR HEATER	PLATE OR SHIELD	CONTROL GRID-1 ED-1	NORMAL RES.-SPACE ED-2	CATHODE IN CHESTER	SCREEN ED-3 PLATE	PLATE IN 50 PLATE	PLATE CURRENT (1) CHANGE	PLATE CURRENT (2) CHANGE
1	224	1 R.F.	2.4	181	3.4	90	3.4	.25	4		
2	224	2 R.F.	2.4	181	3.4	90	3.4	.25	4		
3	224	3 R.F.	2.4	181	3.4	90	3.4	.25	4		
4	227	Det.	2.38	75	-	9.0	9.0	-	.2		
5	227	1 A.F.	2.39	105	-	6.0	6.0	-	4.3		
6	245	2 A.F.	2.45	187	-	41	-	-	12		
7	245	2 A.F.	2.45	187	-	41	-	-	18		
8	280	Rect.	5	-	-	-	-	-	38	38	



U. S. RADIO & TELEVISION CORP.

MODEL 80
Schematic

CASE 80-81 —Line Voltage 115.
On Some Models There Will Be a Cathode Voltage of Approximately 27 Volts—Others 0

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE SET A / DET. ETC.	READINGS, PLUG IN SOCKET OF SET						
			TUBE OUT			TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE
226	1st. R.F.		1.25	110	8.5	-	3.3	6.3	3.0
226	2nd. R.F.		1.25	110	8.5	-	3.3	6.3	3.0
226	3rd. R.F.		1.25	110	8.5	-	3.3	6.3	3.0
226	4th. R.F.		1.25	110	8.5	-	3.3	6.3	3.0
227	Detector		2.00	27	0.0	0.0	1.4	1.4	0.0
226	1st. A.F.		1.27	110	7.8	-	2.7	5.7	3.0
171A	2nd. A.F.		4.80	165	37.0	-	17.0	19.5	2.5
280	Rectifier		4.00	-	-	-	24.0	-	-

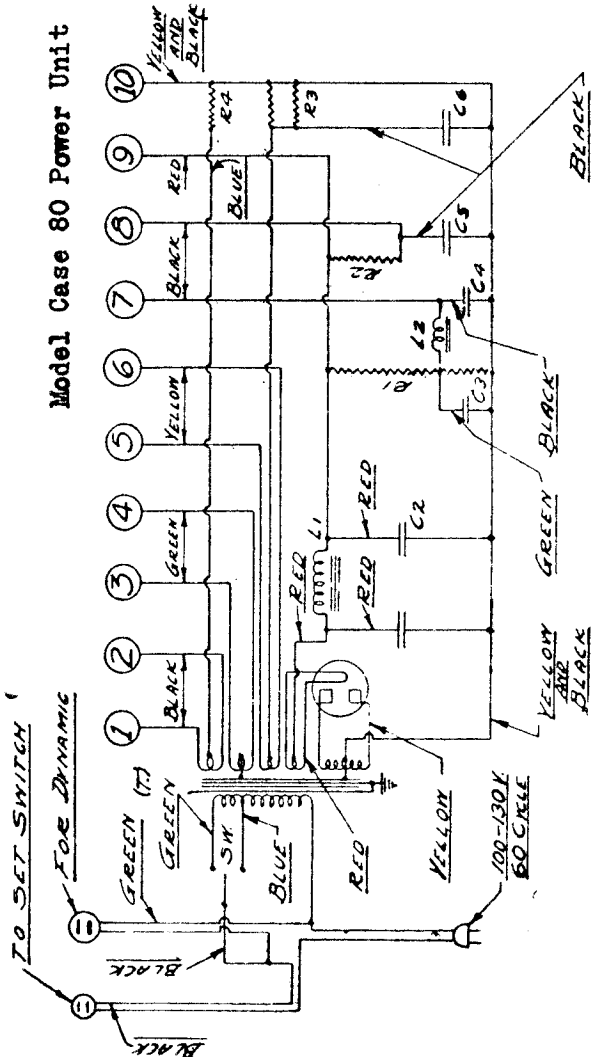
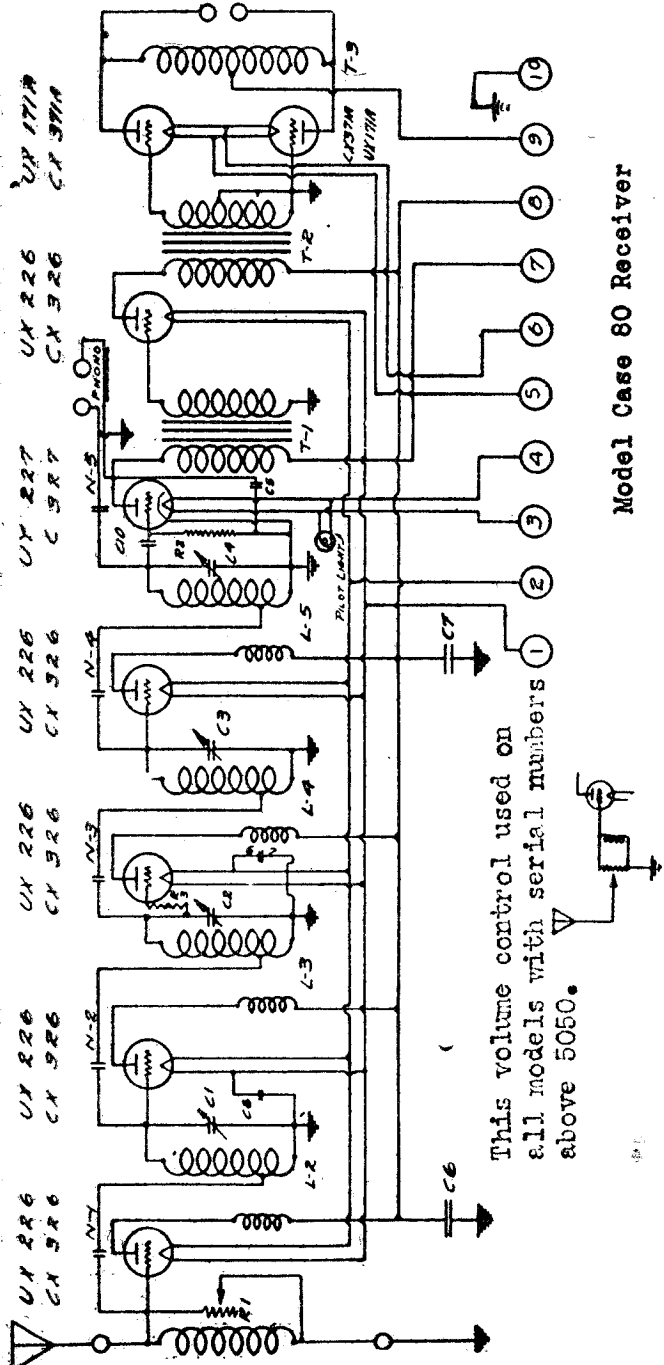
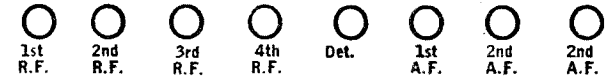
Case 81B, 81C

(A.C.)

CX-380

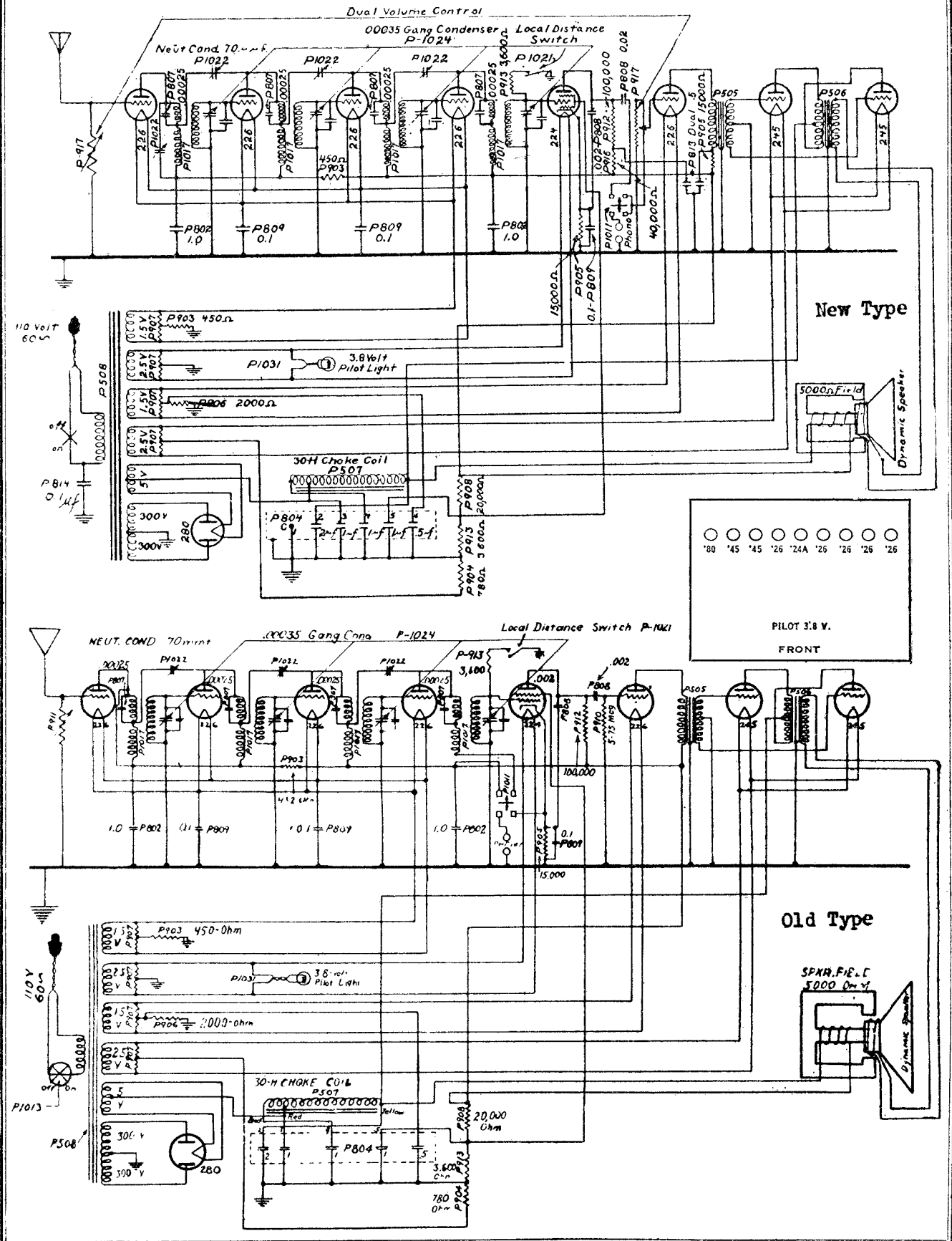


CX-326 CX-326 CX-326 CX-326 C-327 CX-326 CX-371A CX-371A



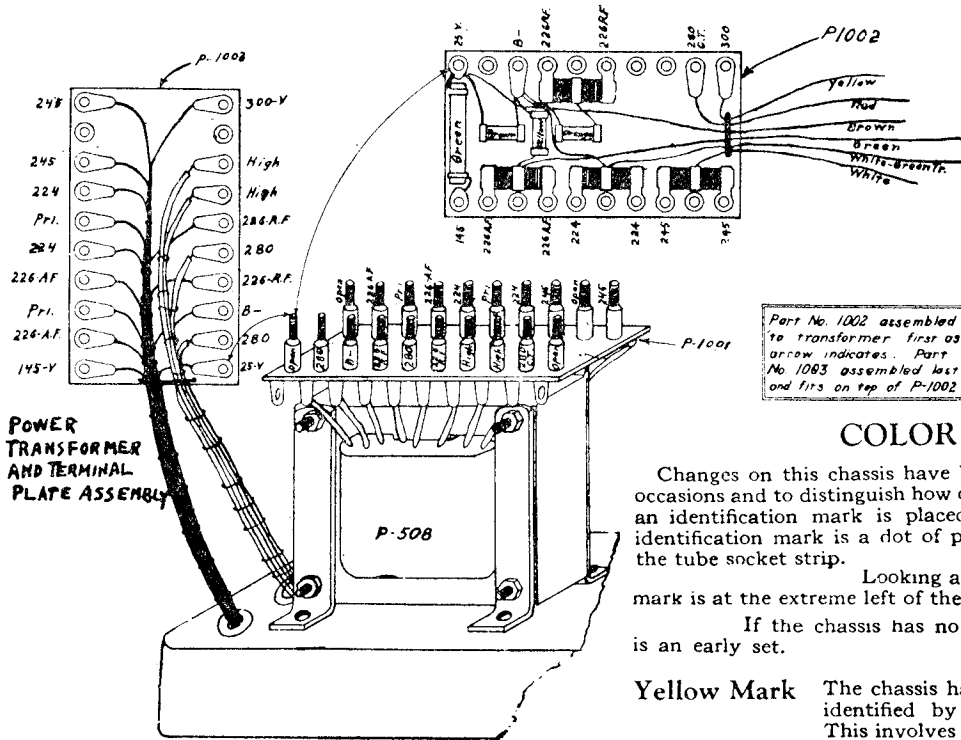
WELLS-GARDNER & CO.

MODEL C,CG Schematic 1st & 2nd Types



MODEL C,CG
Voltage - Data
1st & 2nd Types

WELLS - GARDNER & CO.



COLOR CODE

Changes on this chassis have been made on several different occasions and to distinguish how one chassis differs from another, an identification mark is placed on each one changed. This identification mark is a dot of paint found on the end rivet of the tube socket strip.

Looking at the chassis from the back the mark is at the extreme left of the 226 tube socket

If the chassis has no mark it is understood that it is an early set.

Yellow Mark The chassis having the first changes may be identified by the yellow indicating mark. This involves four changes.

1. A "dual volume control" in place of the single type. The new volume control is made in two sections, with five lugs. The section nearest the chassis, having two lugs, operates exactly the same as the single volume control. The section behind the first, having three lugs, is placed in the first audio circuit to reduce the audio amplification and operates in tandem with the antenna volume control.

2. An interchange of position of the two audio transformers. The re-arrangement of the audio transformers has not altered their connections in the circuit.

3. An addition of a "dual half microfarad condenser" and two carbon resistors in the "B" circuit of the detector and first audio tubes. The 40,000 ohm black resistor with one section of the dual condenser is placed in the detector circuit (224) and the 15,000 ohm blue resistor with the other section of the dual condenser is placed in the first audio circuit (226). You will note that the yellow and blue leads in the cable connecting to the terminal strip have been interchanged.

4. A change in the location of the grounding of No. 1 lug on the condenser block. This lug is now grounded to the condenser case with a short piece of bare wire.

Red Mark
(Serial Number 39,000-42,999)

All chassis having a red mark on the rivet of the tube socket strip have all of the changes mentioned above and in addition, have a one-tenth microfarad condenser connected from ground to one

side of the 110 volt line. A peculiarity that may be experienced by the addition of this condenser is a loud hum on every station tuned in only when the antenna wire coming from the set is connected to ground. This can be eliminated by reversing the plug in the socket. Also be sure your antenna is not grounded, either by some other set being connected to your aerial or through any other means.

Green Mark
(Serial Number 43,000 and up)

All Chassis with a green mark on the rivet of the tube socket strip contain the above changes and in addition have a change in the "combination phonograph switch" circuit. This changed circuit makes use

of only the audio system of the set for phonograph reproduction, whereas the original circuit included the detector tube

The Phonograph, Radio, On, and Off positions of the switch are the same as in the early sets. To obtain maximum volume and best tone quality a pick-up coupling transformer should be used to match the pick-up used.

OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
226	1st R.F.	1.35	116	8.5				4.7	8.7
226	2nd R.F.	1.35	116	8.5				4.7	8.7
226	3rd R.F.	1.35	116	8.5				4.7	8.7
226	4th R.F.	1.35	116	8.5				4.7	8.7
224	Det.	2.2	80	1.3	15				
226	1st A.F.	1.4	110	1.0				4.0	5.0
245	2nd A.F.	2.2	232	42				27	32
245	2nd A.F.	2.2	232	42				27	32
280	Rect.	4.6							84

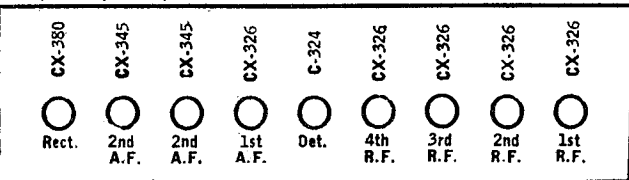
Line Voltage During Test—115 Volts.

REVISION OF OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
224	Det.	2.2	75	1.3	15				
226	1st A.F.	1.4	77	1.0				4	5

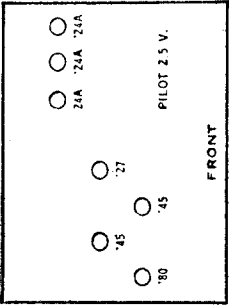
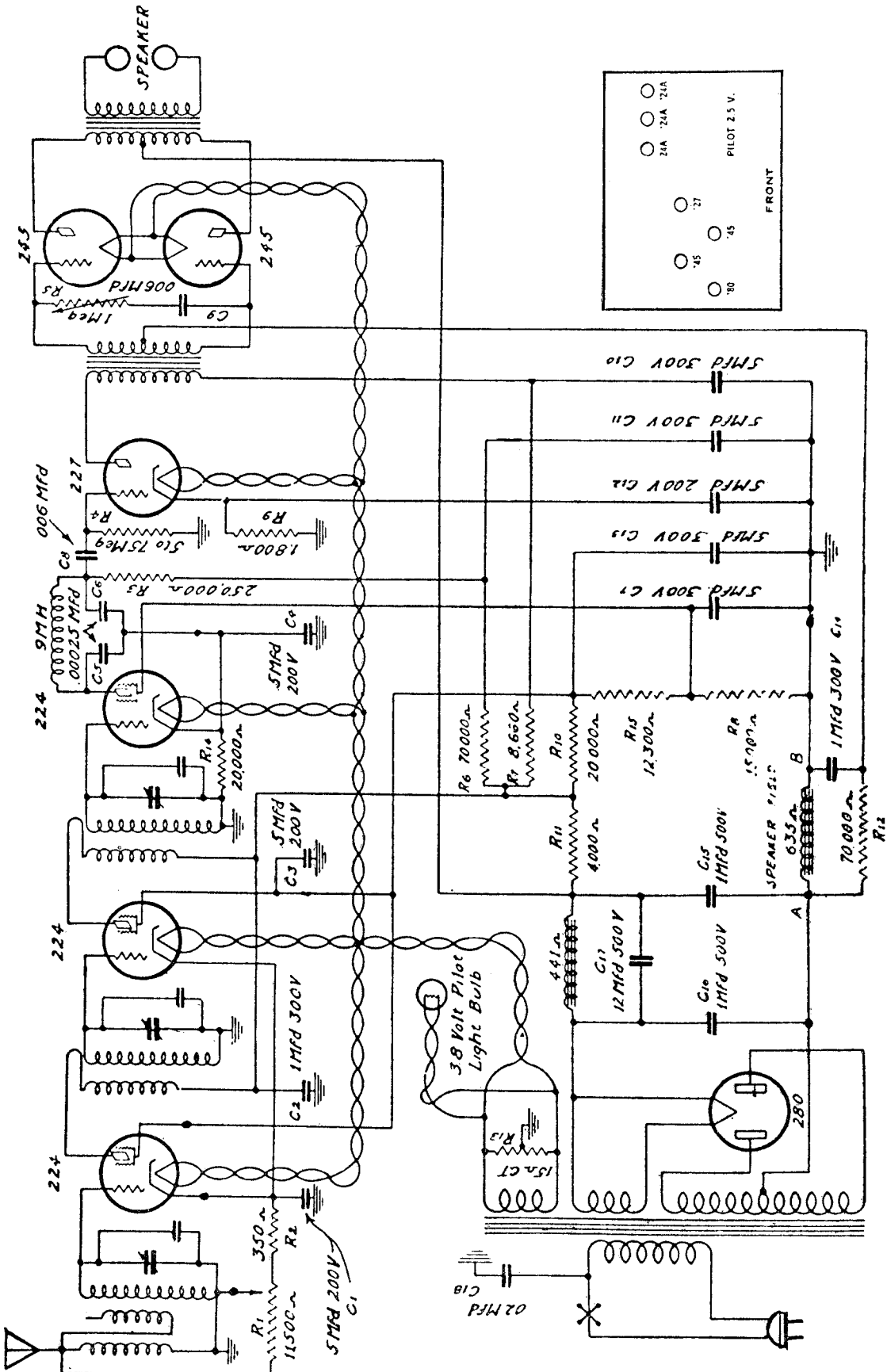
200, 291, 292, 9950

(A.C.)



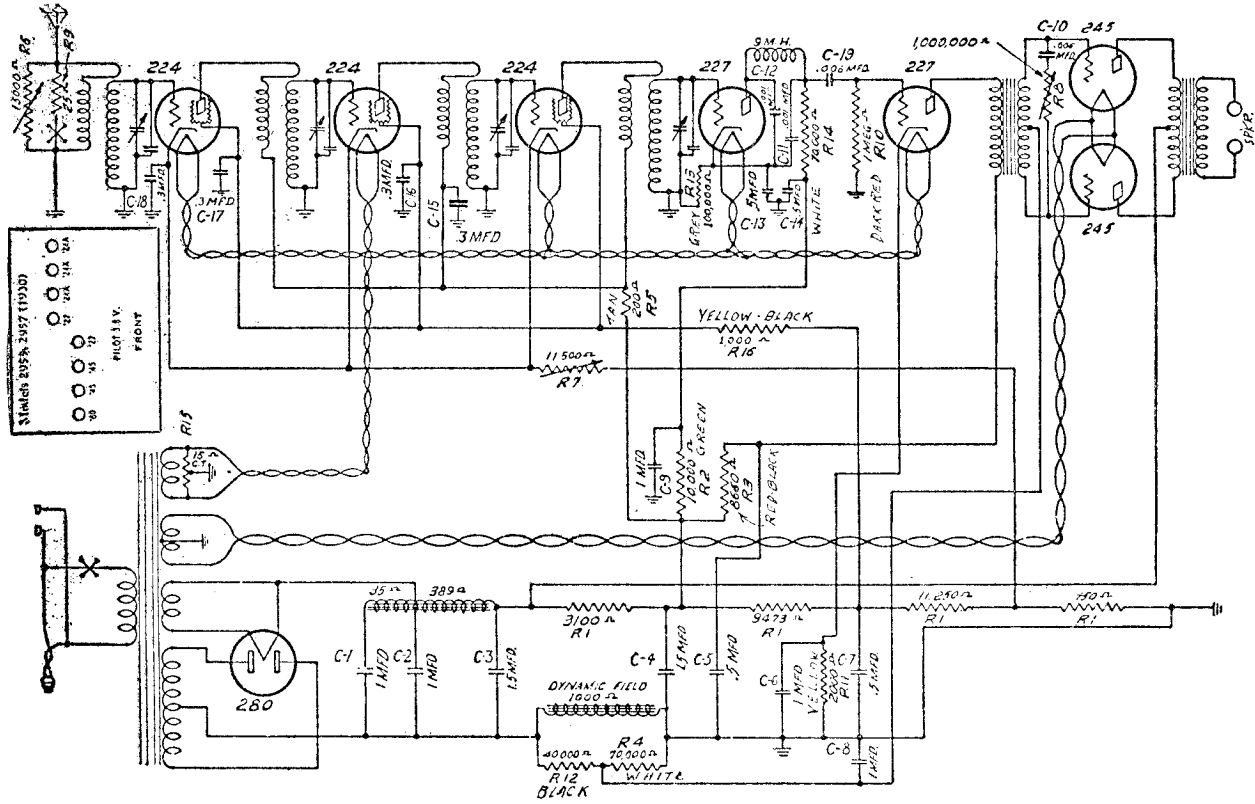
WELLS - GARDNER & CO.

MODEL 72
Schematic

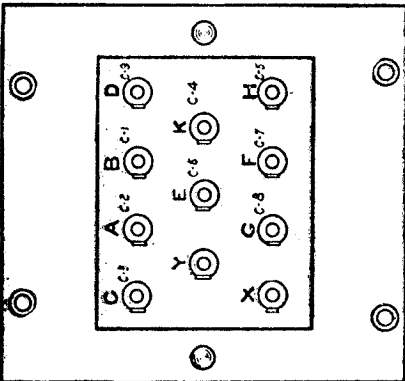


MODEL 80, 82 AC
60 cycle
Schematic
Data

WELLS - GARDNER & CO.



CAPACITY	
CODE	60 CYCLE 25 CYCLE
A	1.0 MF.C2
B	1.0 MF.C4
C	1.5 MF.C3
D	1.0 MF.C9
E	1.0 MF.C6
F	0.5 MF.C7
G	1.0 MF.C8
H	0.5 MF.C5
K	1.5 MF.C4
X	COMMON
Y	COMMON



Filter Condenser (60 and 25 cycle receivers).

FIXED CONDENSERS

Condensers C1 to C9 inclusive are in the filter block. C1, C2, C3, C4, and C7 are in the main filter circuits. C5 bypasses R3, which is the 8,660 ohm resistor in the first audio plate circuit. C6 by-passes R11, the cathode bias resistor on the first audio stage. C8 by-passes the grid bias on the 245 tubes, (obtained through R4 and R12) and C9 bypasses the 10,000 ohm resistor R2 in the detector plate circuit.

C10 and C19 are located on the resistor-condenser terminal strip (See Fig. 4) and are both .006 mfd. moulded condensers. C10 is in the tone control circuit, while C19 is the coupling condenser in the resistance coupled amplifier.

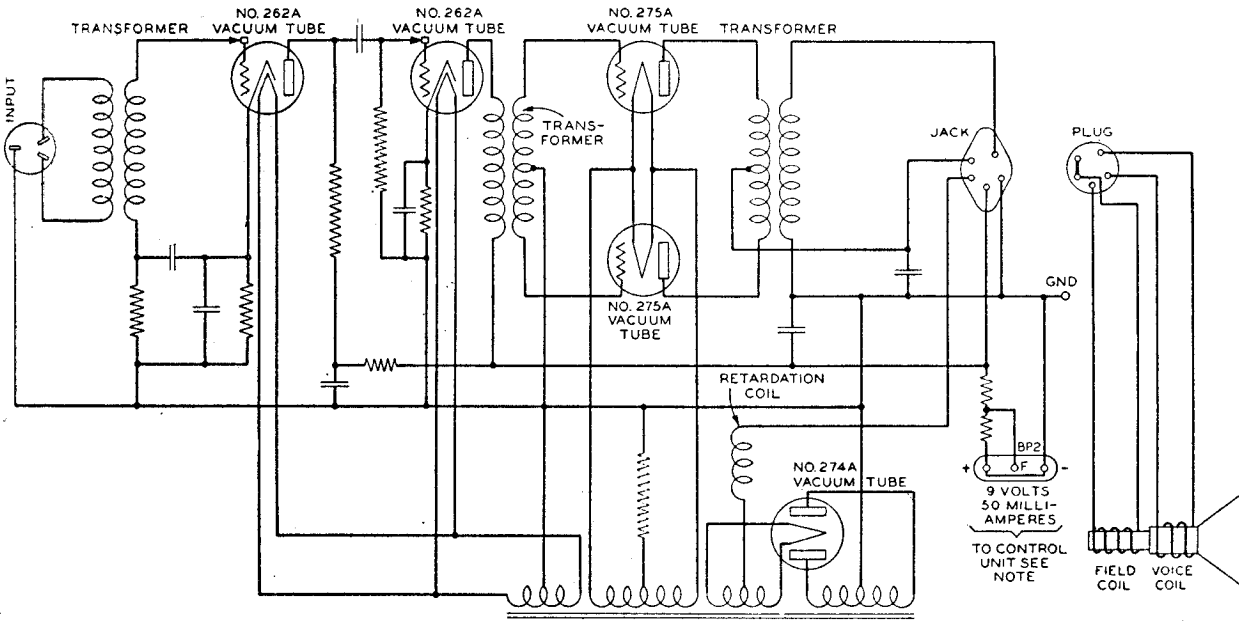
C11 and C12 are .001 mfd. moulded condensers, and are used in the detector plate circuit filter. C13 and C14 are the two units in the dual 1/2 mfd. by-pass condenser.

C15, C16 and C18 are located in the triple 3 mfd. condenser case. C17 is a single .3 mfd. condenser, and is mounted alongside of the triple .3 mfd. condenser case.

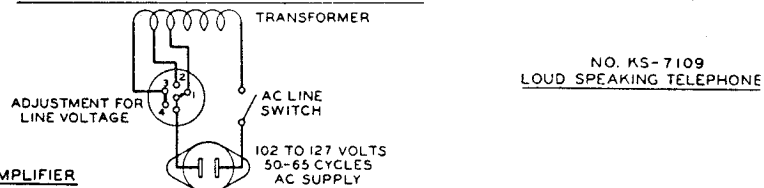
Code Fig. 1	Stock No.	Capacity
C1 to C9 inclusive	50818	9 Mfd. total. Filter block.
C10 and C19	50822	.006 Mfd. White paint spot.
C11 and C12	50821	.001 Mfd. Grey paint spot.
C13 and C14	50826	Dual .5 Mfd. Metal case.
C15, C16, C18	50817	Triple .3 Mfd. Metal case.
C17	50820	.3 Mfd. Metal case.

WESTERN ELECTRIC CO.

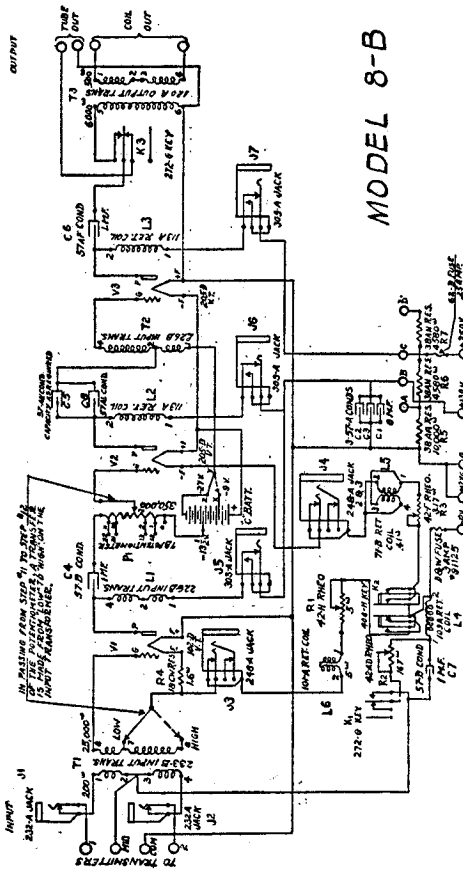
MODEL D-95608
MODEL 8-B
MODEL 8-C



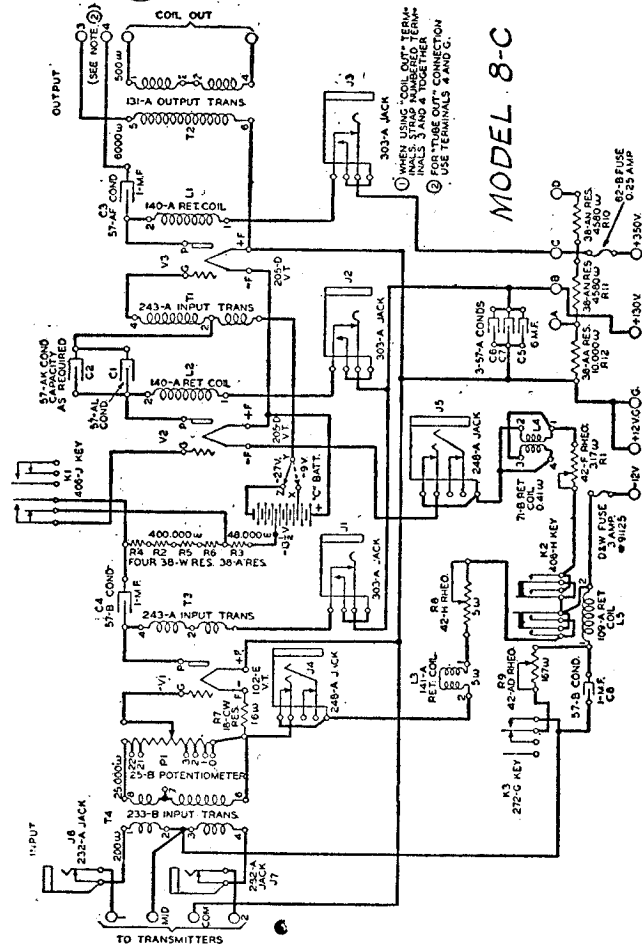
NOTE -
THE STRAP BETWEEN THE + AND - BINDING POSTS ON BP2 SHOULD BE REMOVED ONLY WHEN THESE POSTS ARE CONNECTED TO A CONTROL UNIT FOR SUPPLYING CURRENT TO OTHER APPARATUS



NO. D-95508 AMPLIFIER



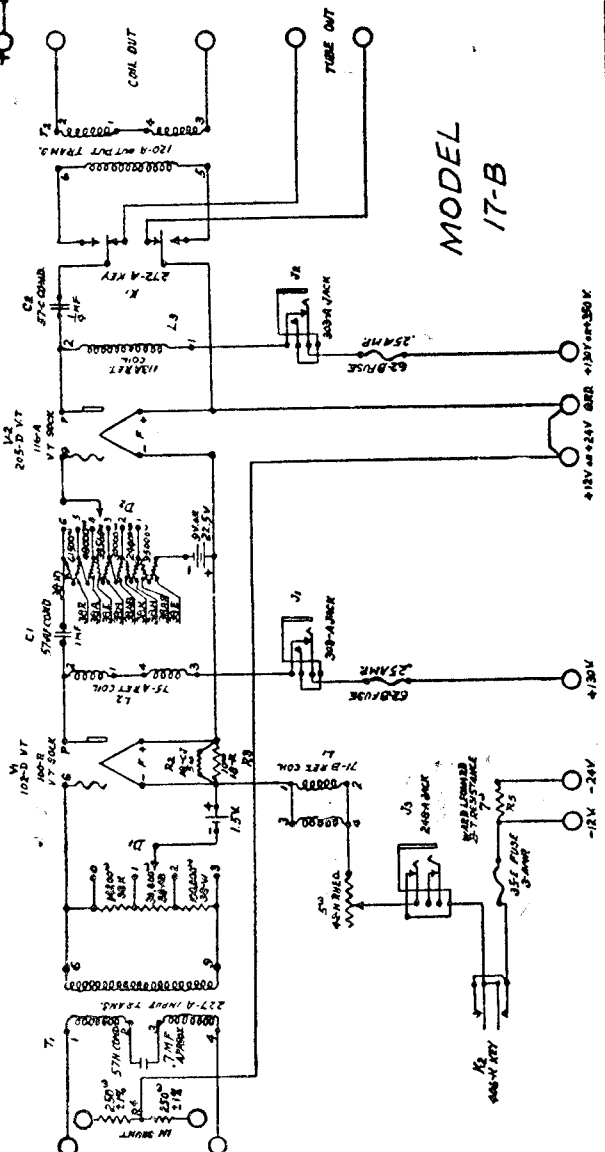
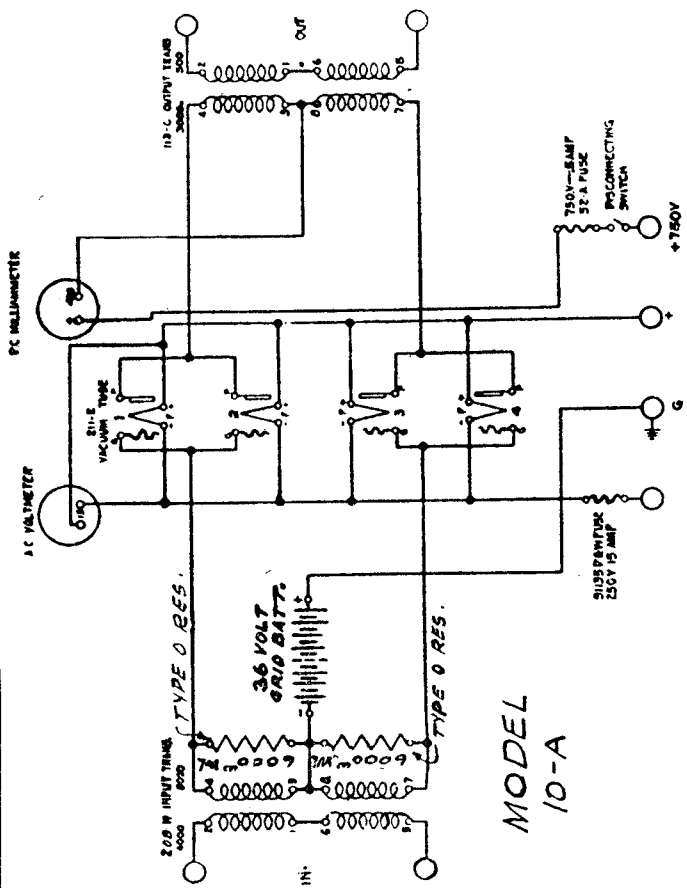
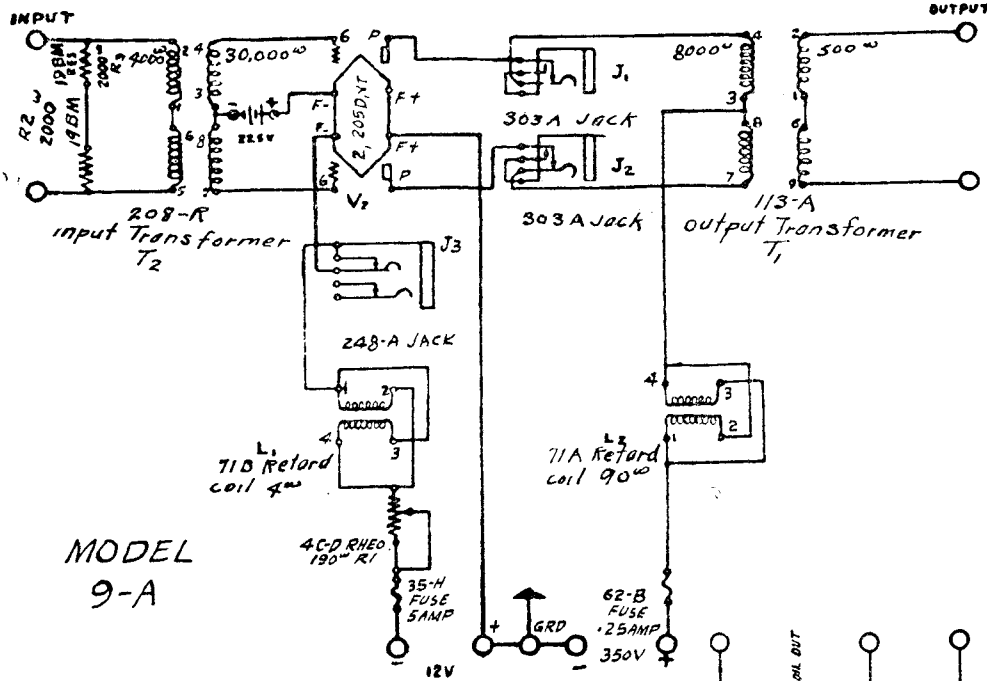
MODEL 8-B



MODEL 8-C

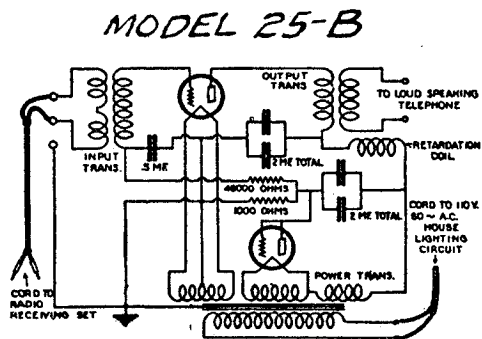
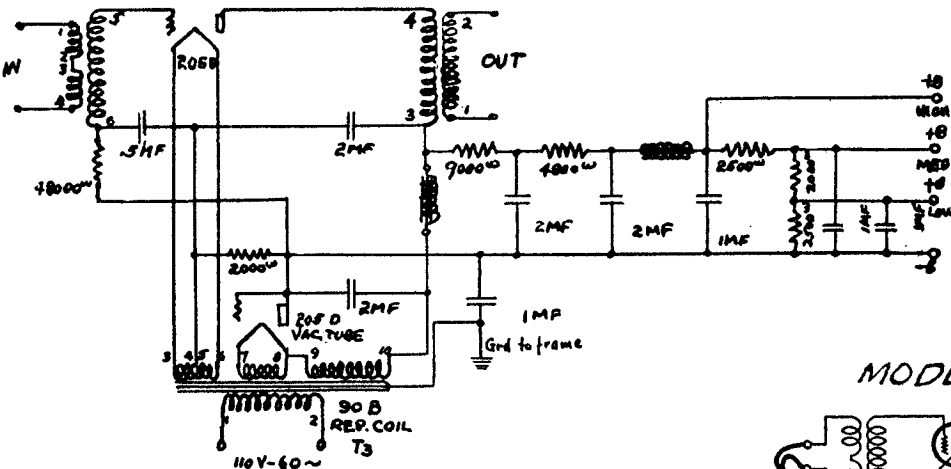
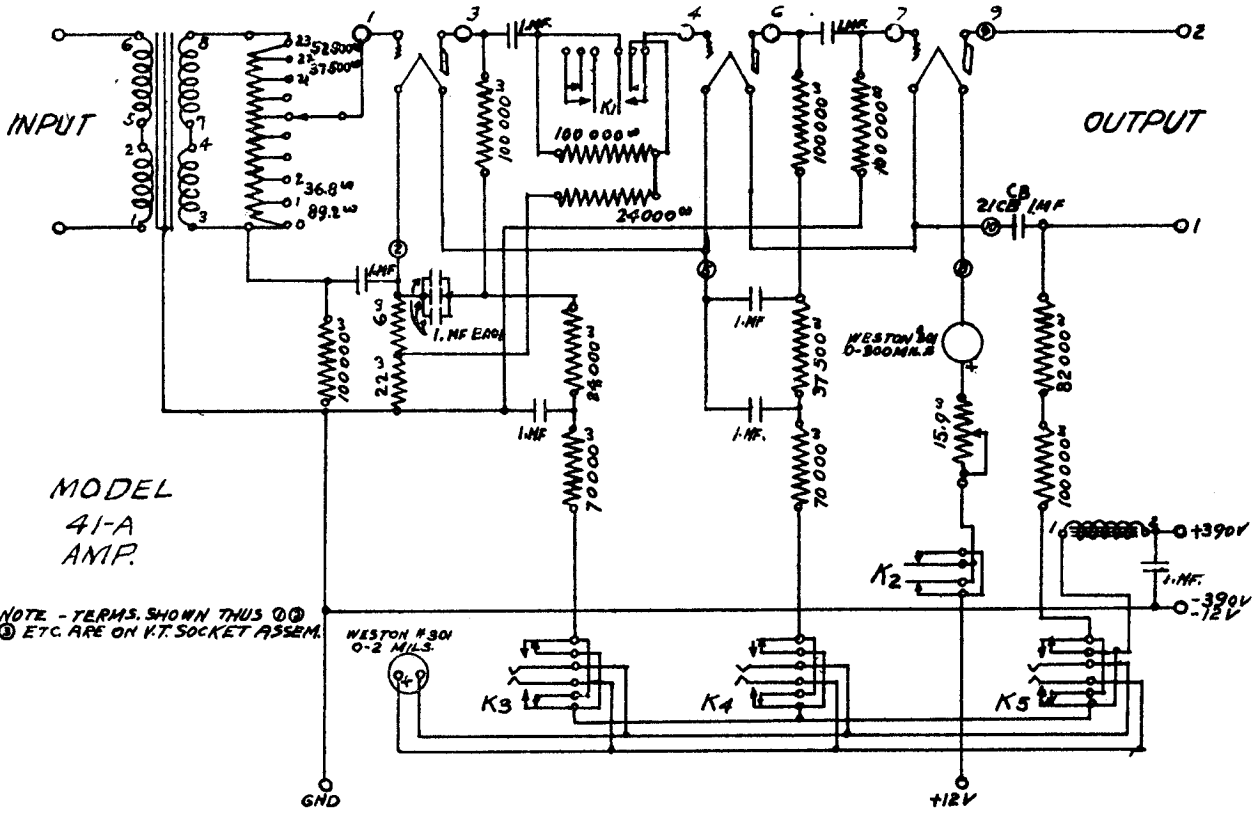
WESTERN ELECTRIC CO.

MODEL 9-A
MODEL 10-A
MODEL 17-B



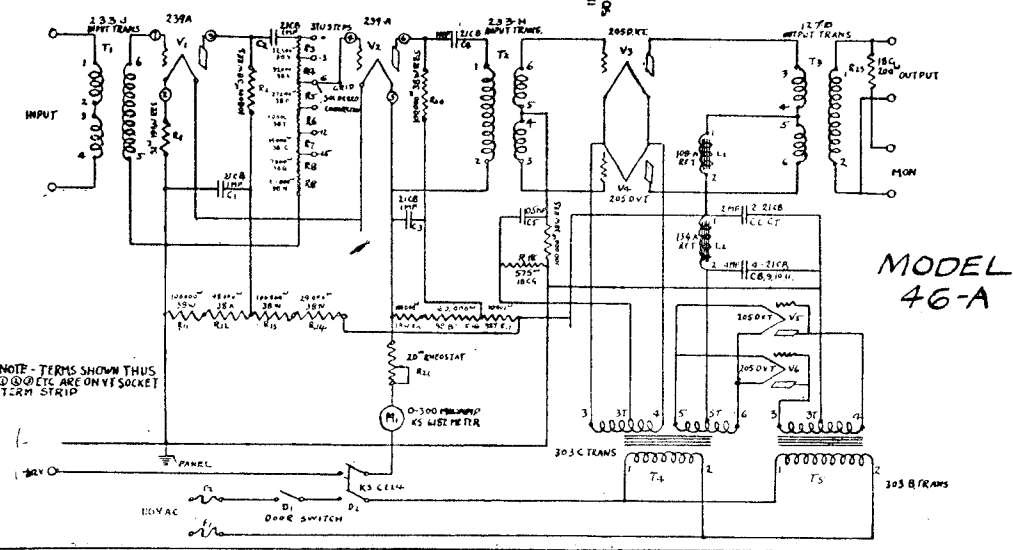
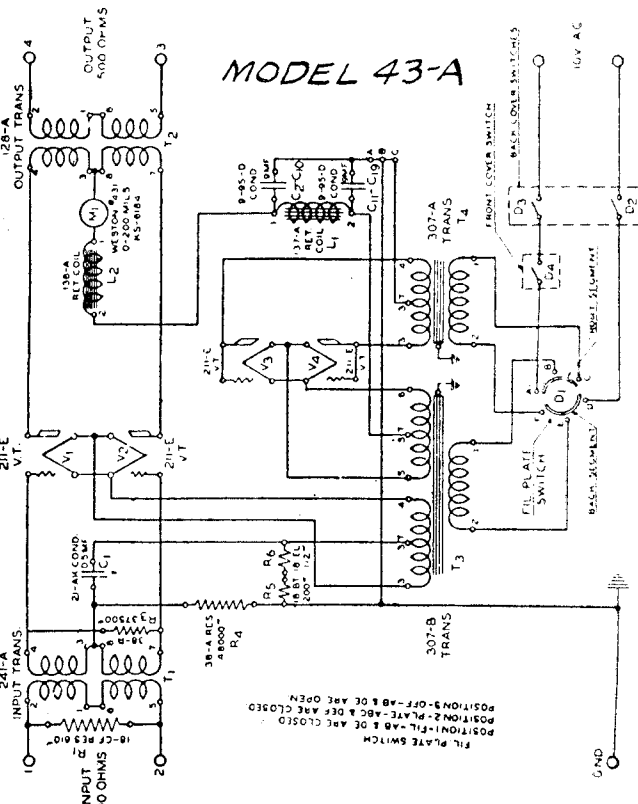
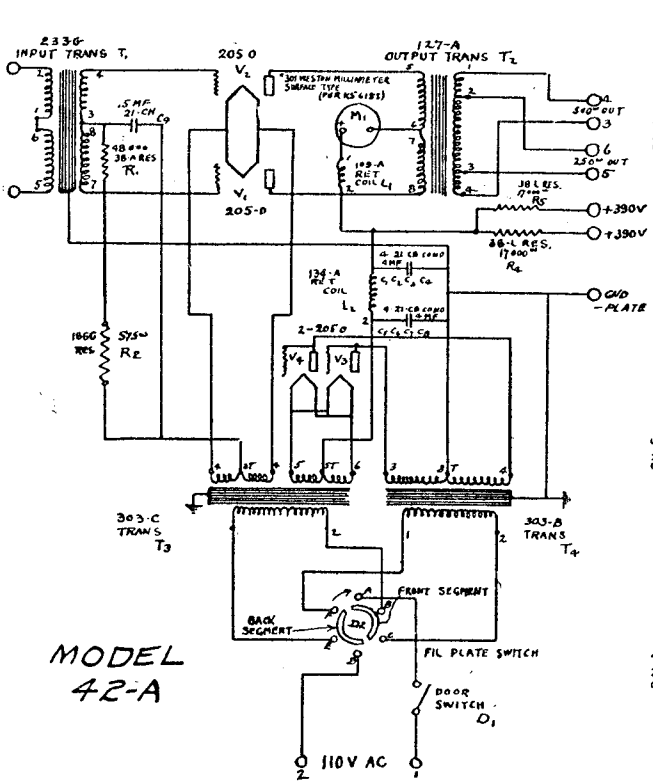
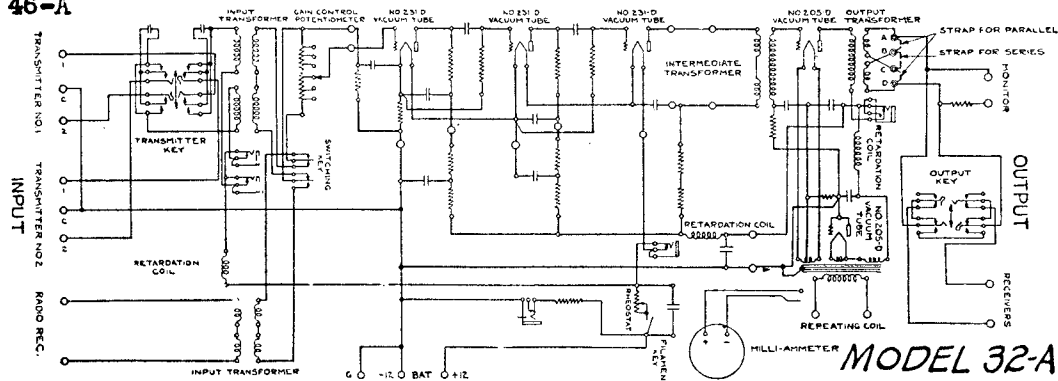
WESTERN ELECTRIC CO.

MODEL 41-A
MODEL 45-A
MODEL 25-B



MODEL 32-A
 MODEL 42-A
 MODEL 43-A
 MODEL 46-A

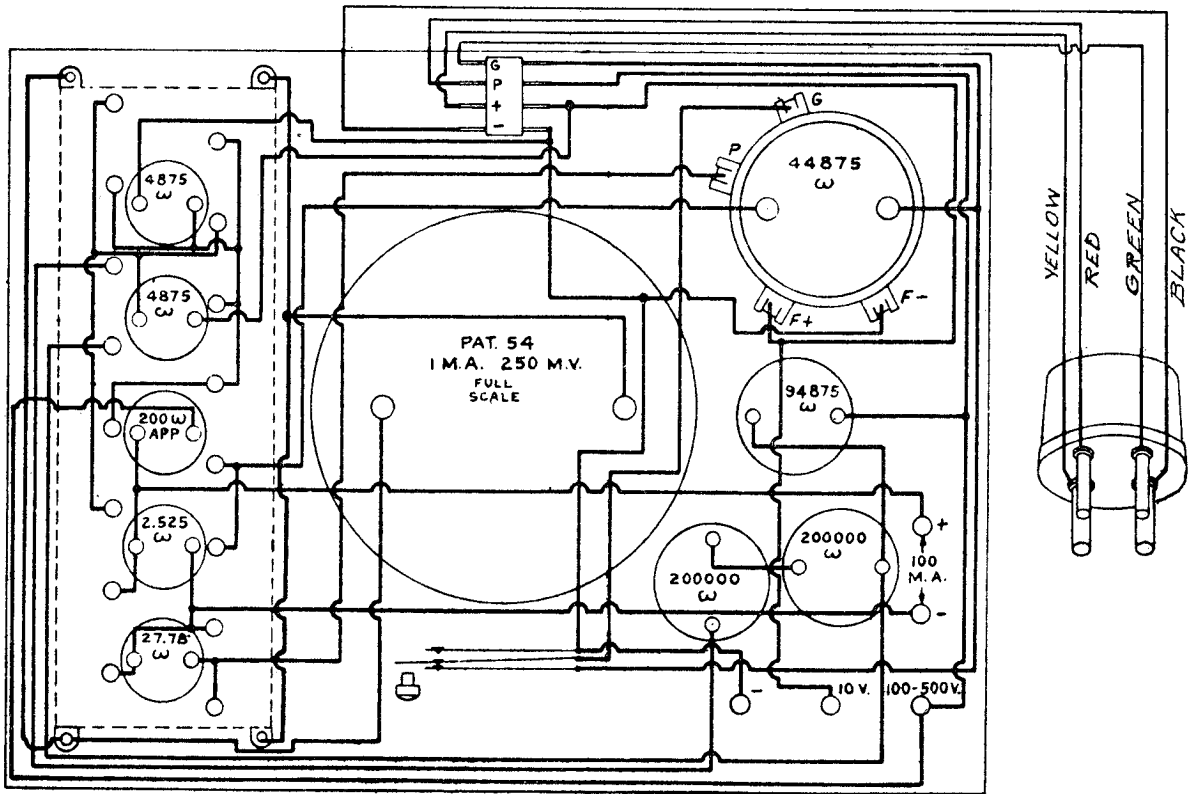
WESTERN ELECTRIC CO.



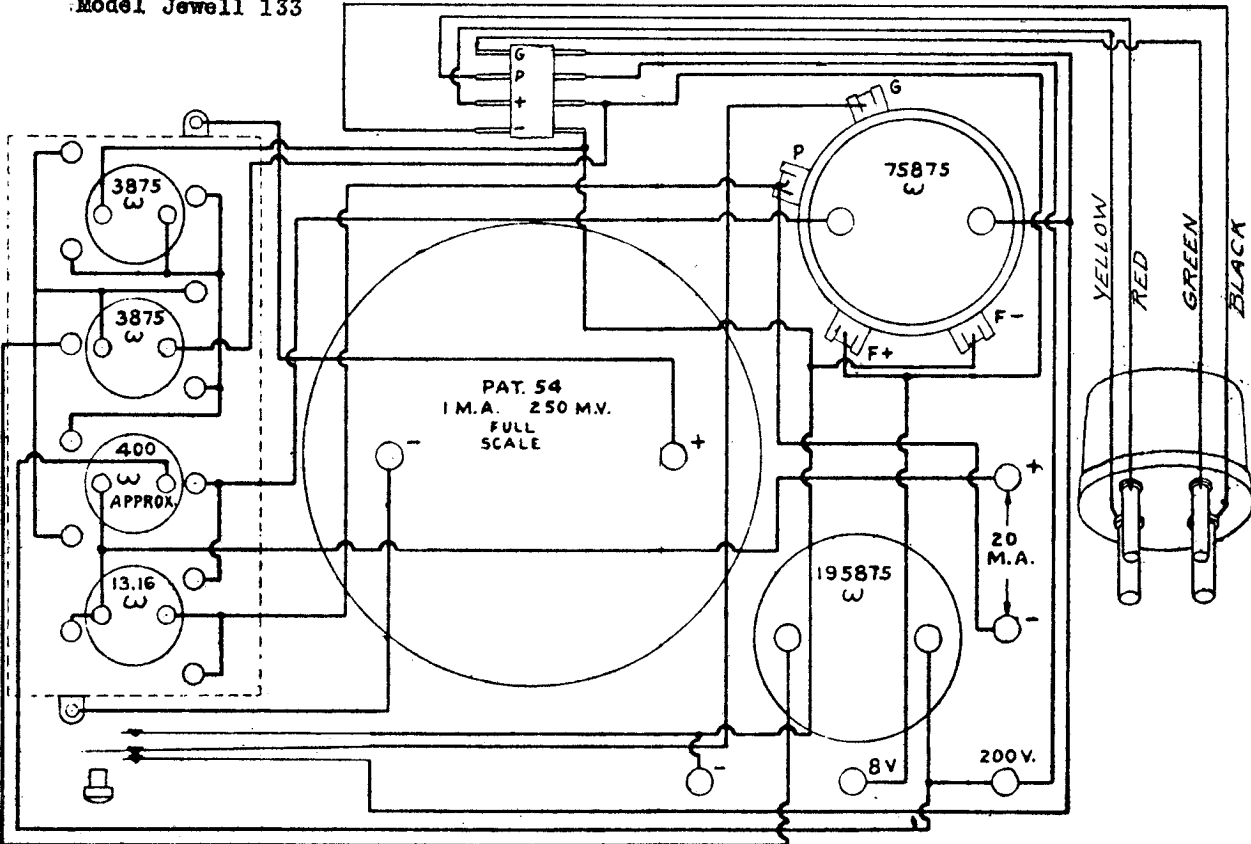
NOTE - TERMS SHOWN THUS
 @ @ @ ETC ARE ON V SOCKET
 T-C M STRIP

MODEL Jewell 133
MODEL Jewell 133-A

WESTON ELECTRICAL INSTRUM'T CORP.



Model Jewell 133

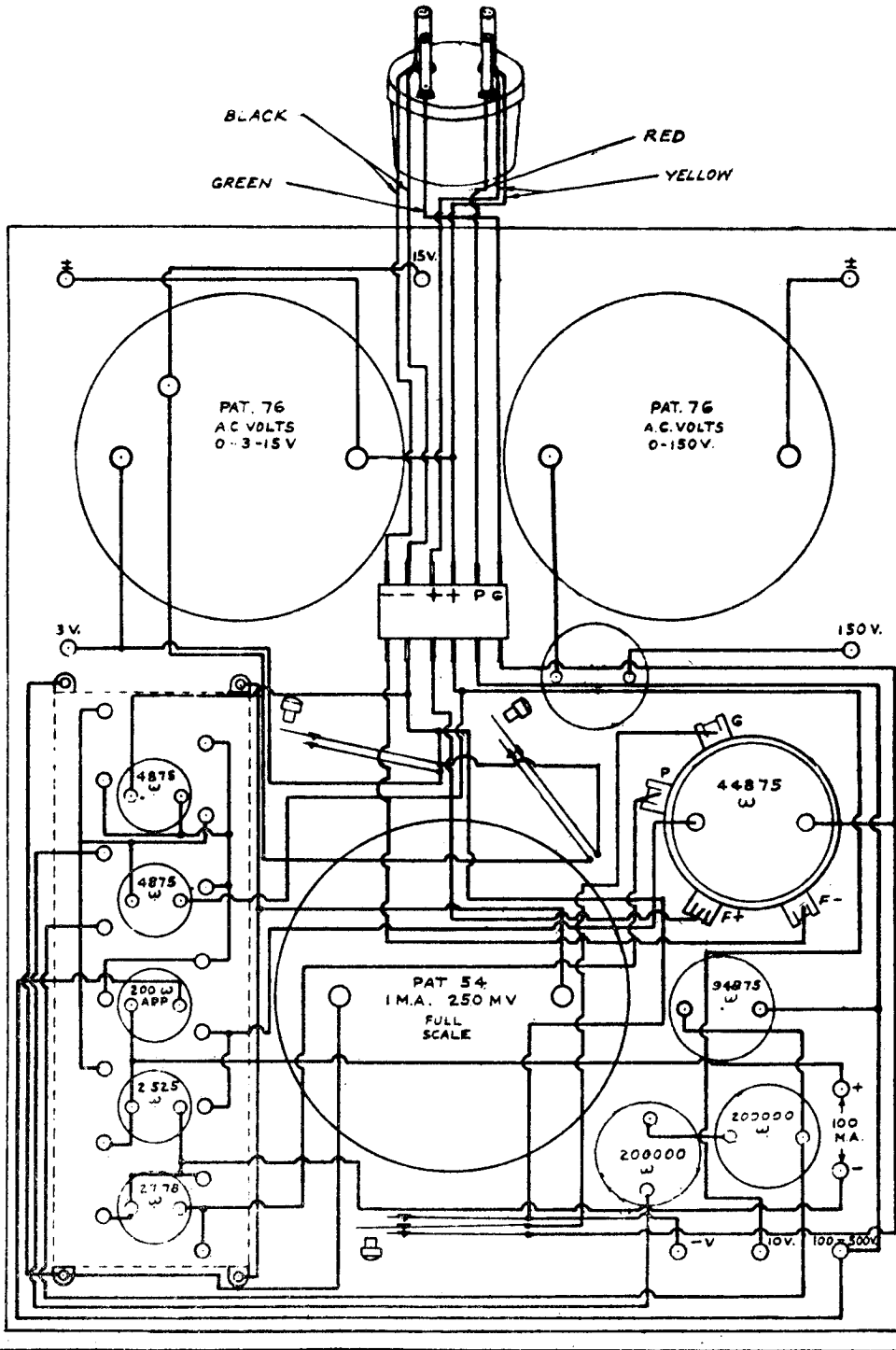


Model Jewell 133-A

WESTON ELECTRICAL INSTRUM'T CORP.

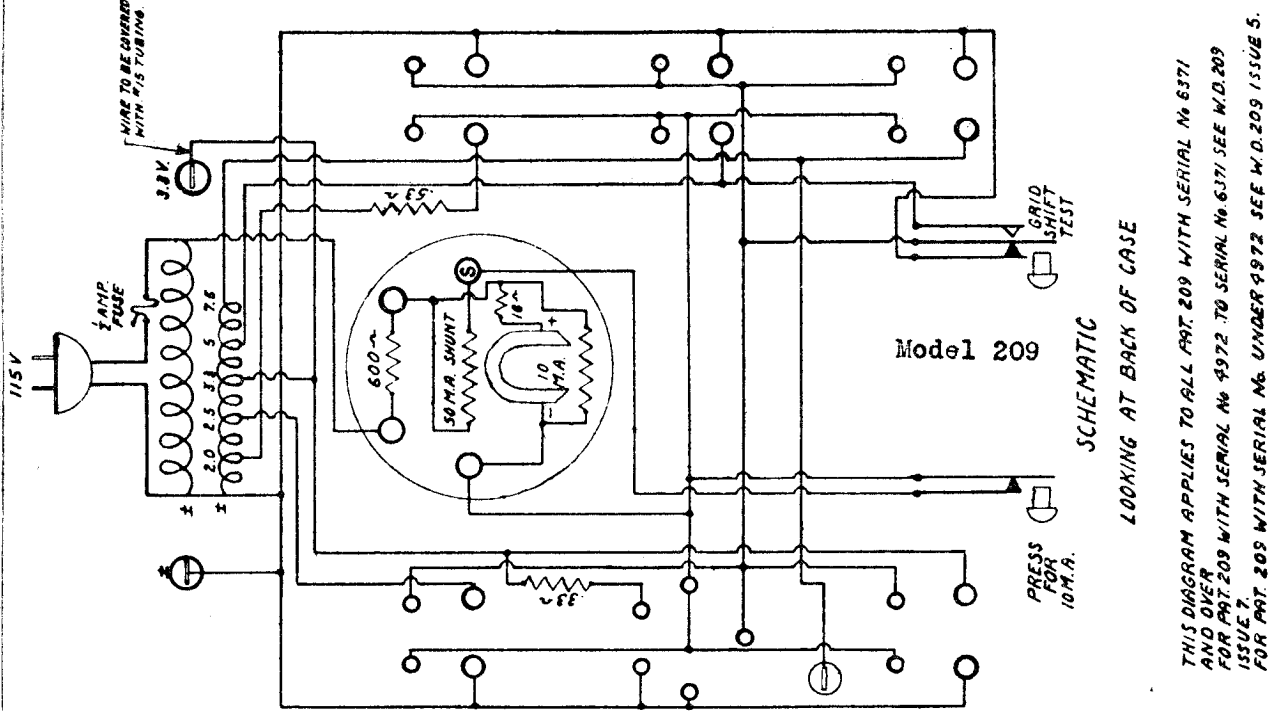
MODEL Jewell 137

LOOKING AT UNDERSIDE OF PANEL

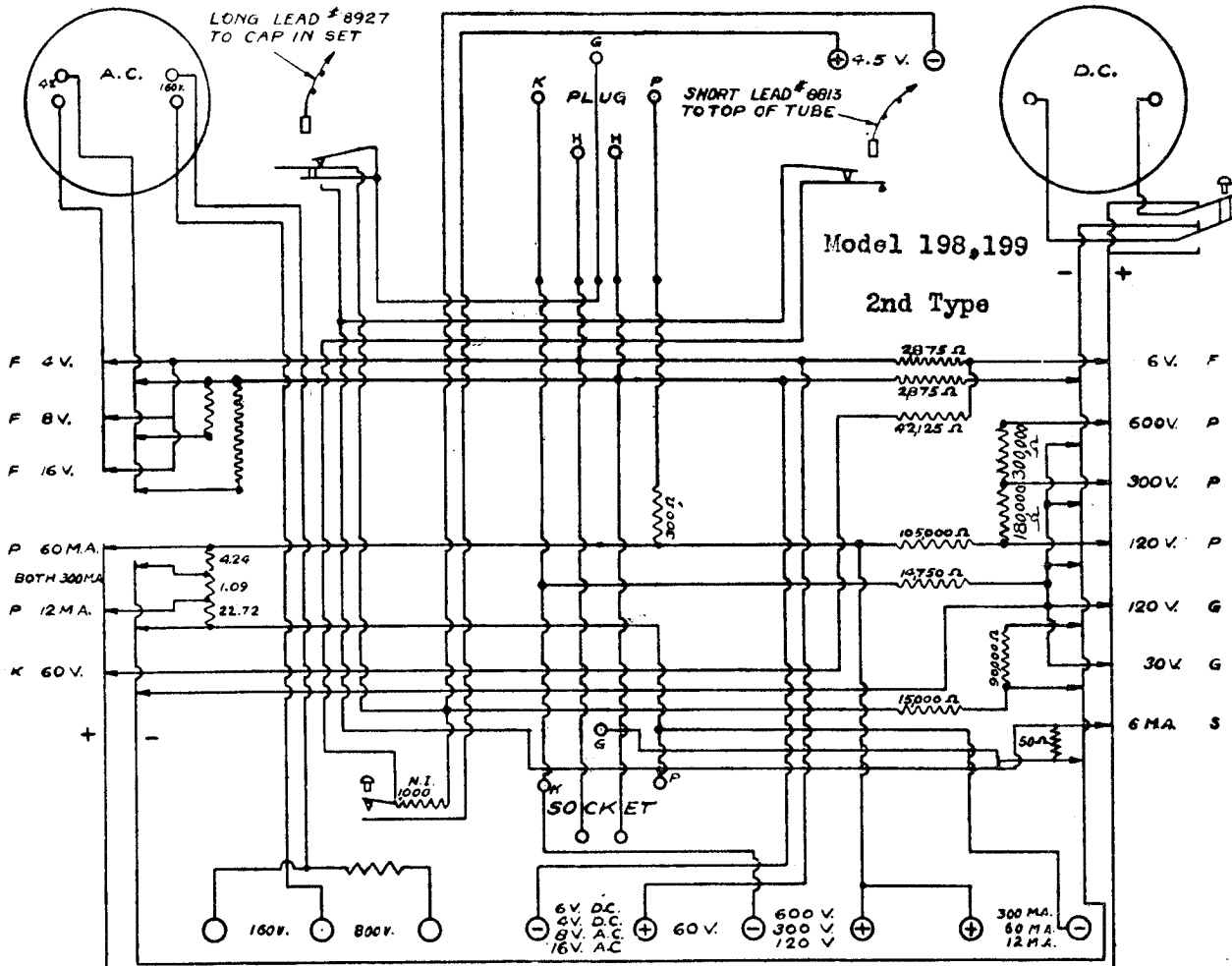


MODEL Jewell
198,199
2nd Type
MODEL Jewell 209

WESTON ELECTRICAL INSTRUM'T CORP.

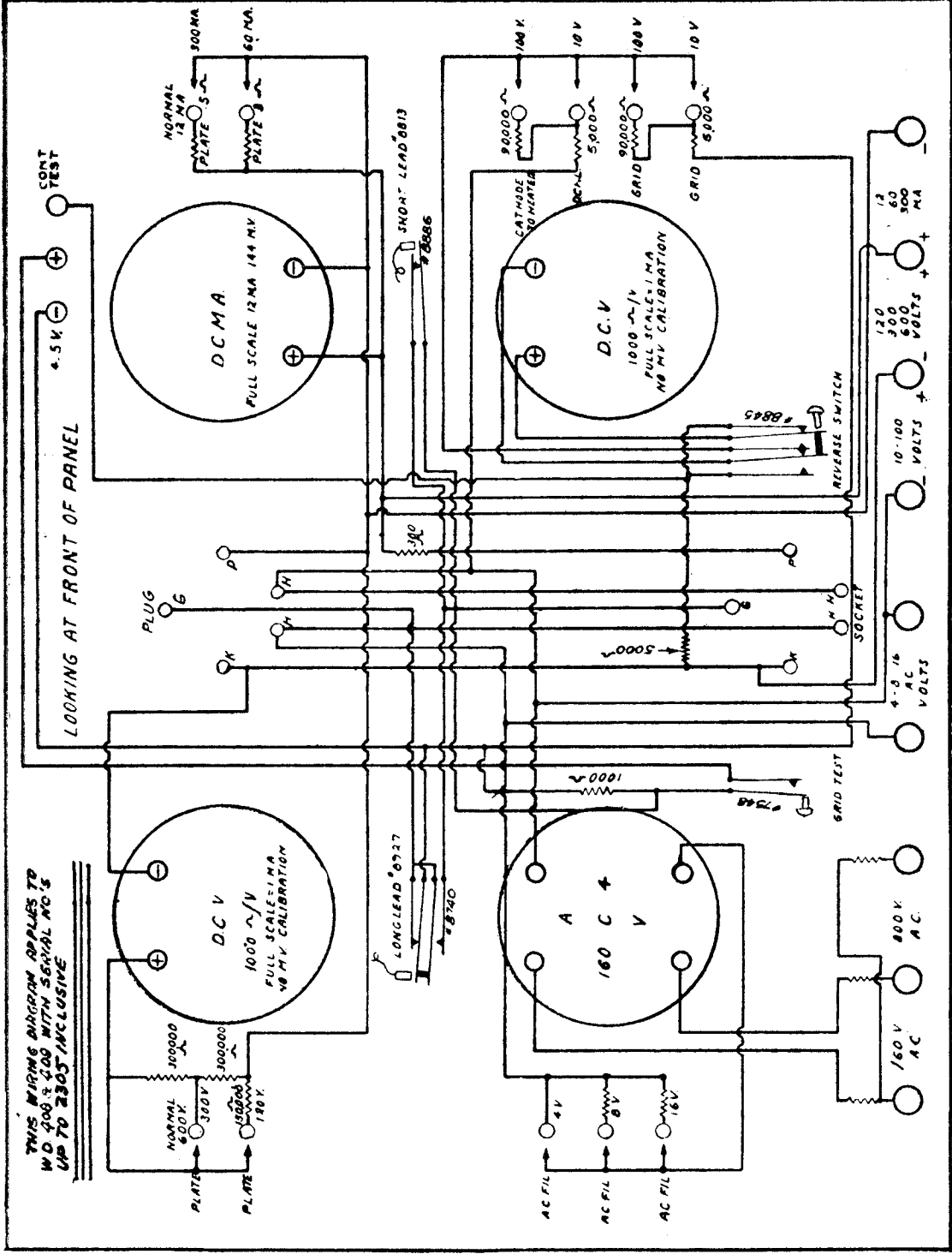


THIS DIAGRAM APPLIES TO ALL PAT. 209 WITH SERIAL No 6371 AND OVER FOR PAT. 209 WITH SERIAL No 4972 TO SERIAL No 6371 SEE W.D. 209 ISSUE 3 FOR PAT. 209 WITH SERIAL No UNDER 4972 SEE W.D. 209 ISSUE 5.



WESTON ELECTRICAL INSTRUM'T CORP.

MODEL Jewell
408,409
1st Type



MODEL Jewell
408,409
2nd Type

WESTON ELECTRICAL INSTRUM'T CORP.

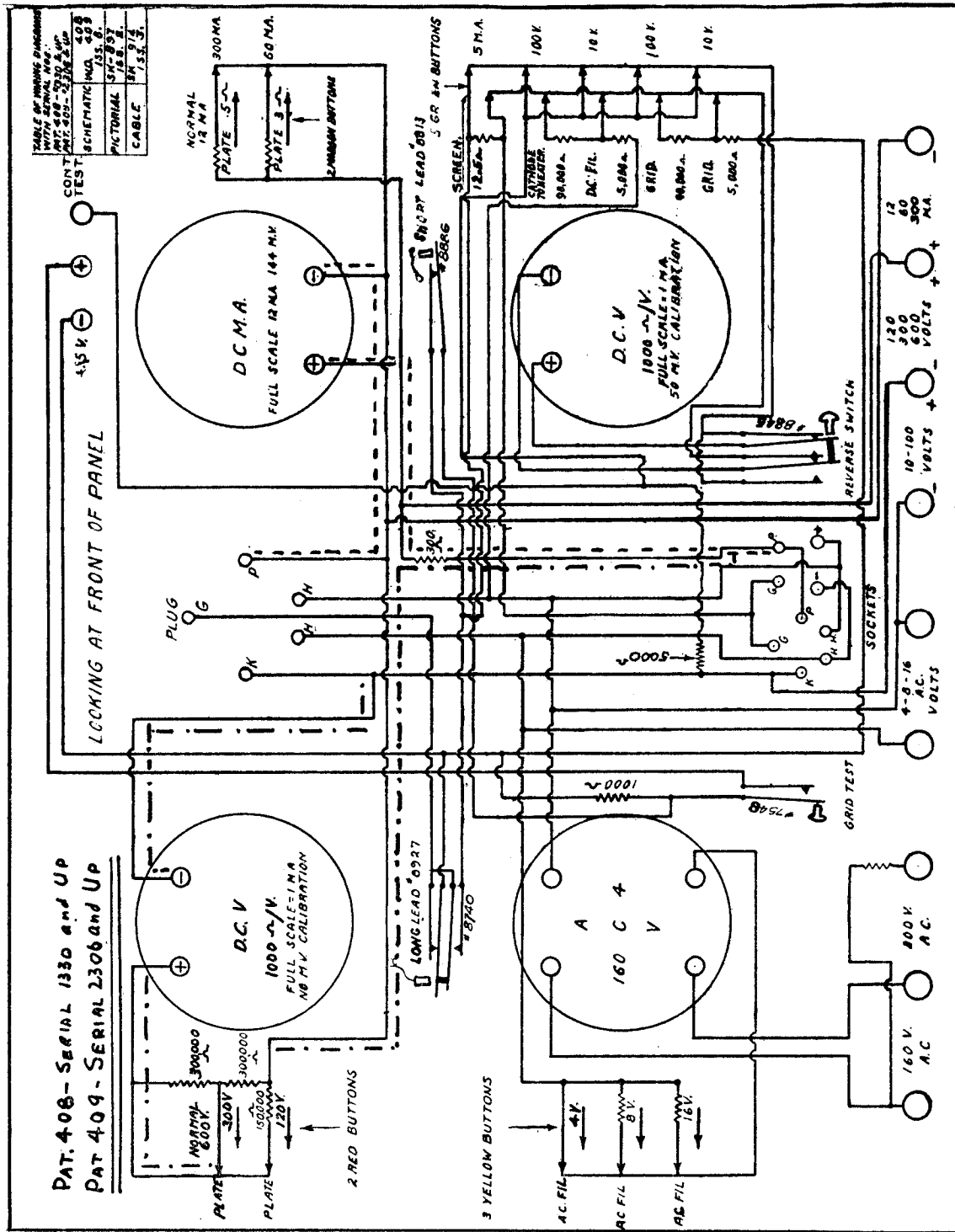


TABLE OF MOVING PARTS
WITH SERIAL NO. UP
CONT. 408-205-230K & UP

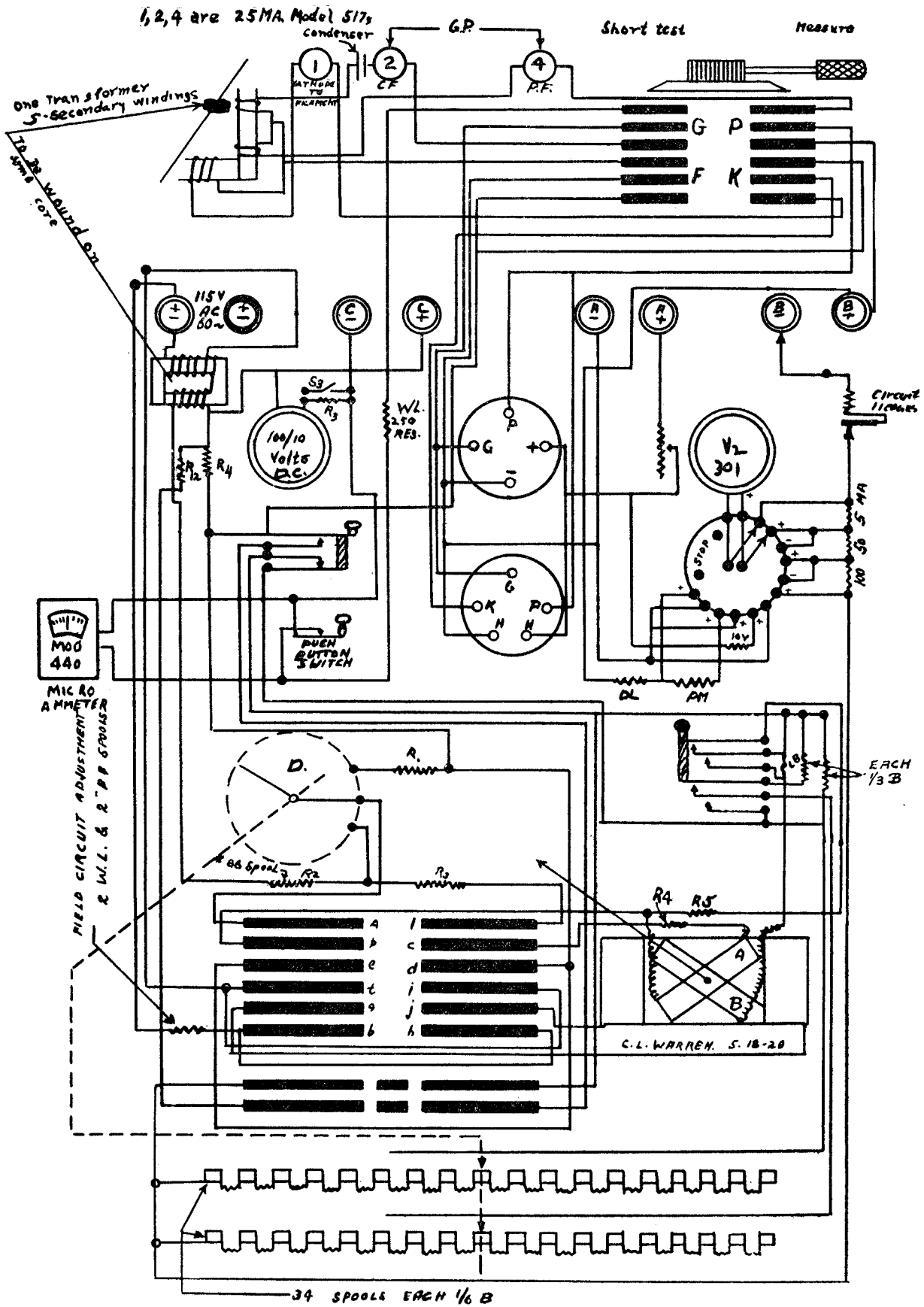
SCHEMATIC NO.	408
PICTORIAL	575-509
CABLE	18 B. 2
	133.31

PAT. 406 - SERIAL 1330 and UP
PAT 409 - SERIAL 2306 and UP

LOOKING AT FRONT OF PANEL

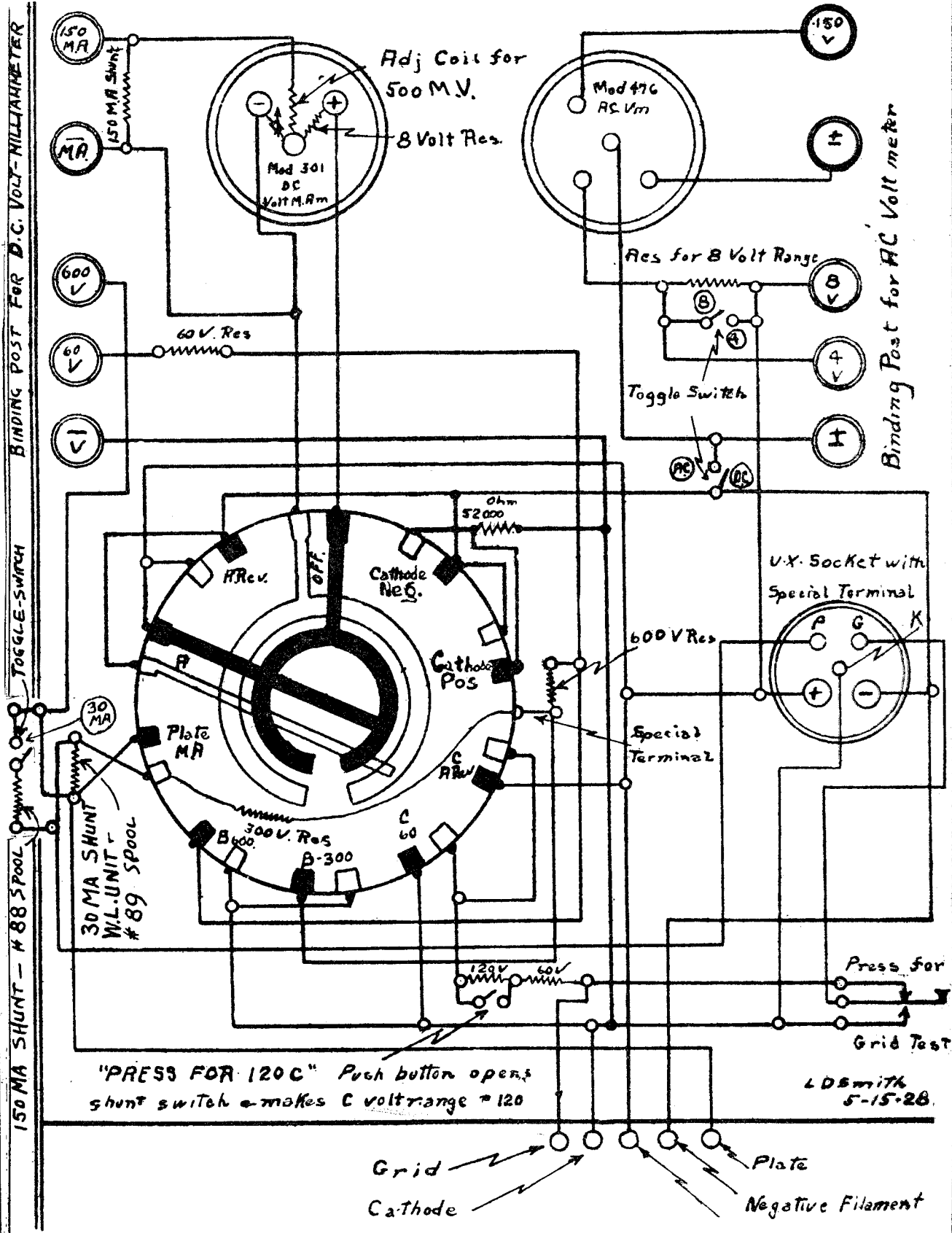
MODEL Weston.
526. Type 7

WESTON ELECTRICAL INSTRUM'T CORP.



MODEL Weston
537

WESTON ELECTRICAL INSTRUM'T CORP.

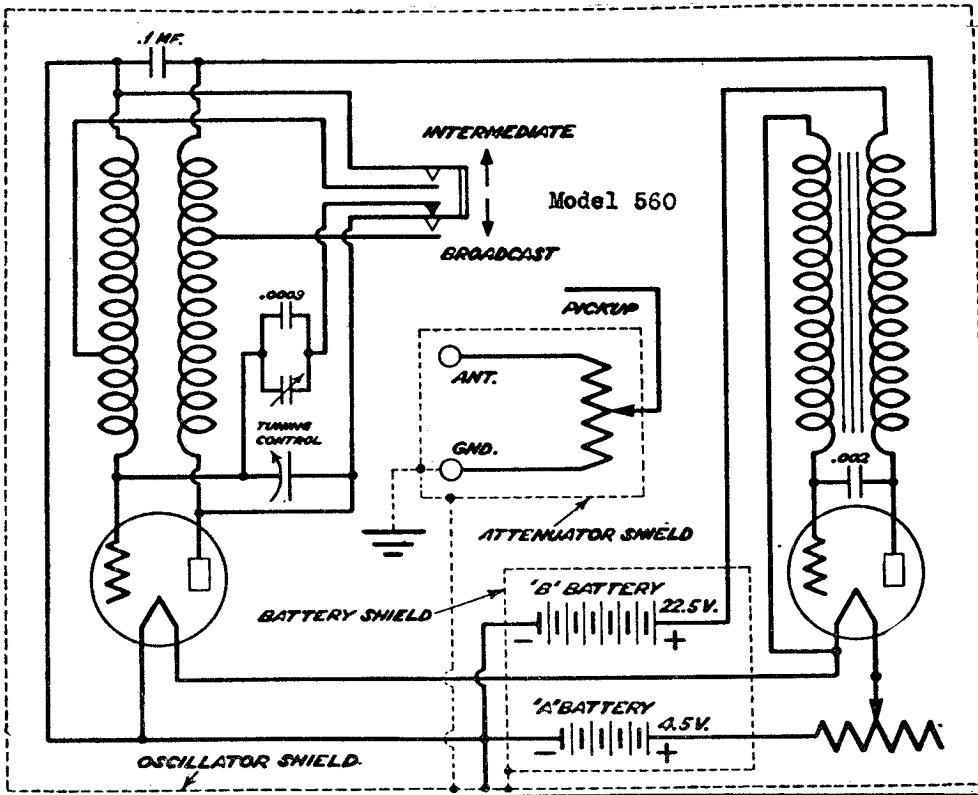
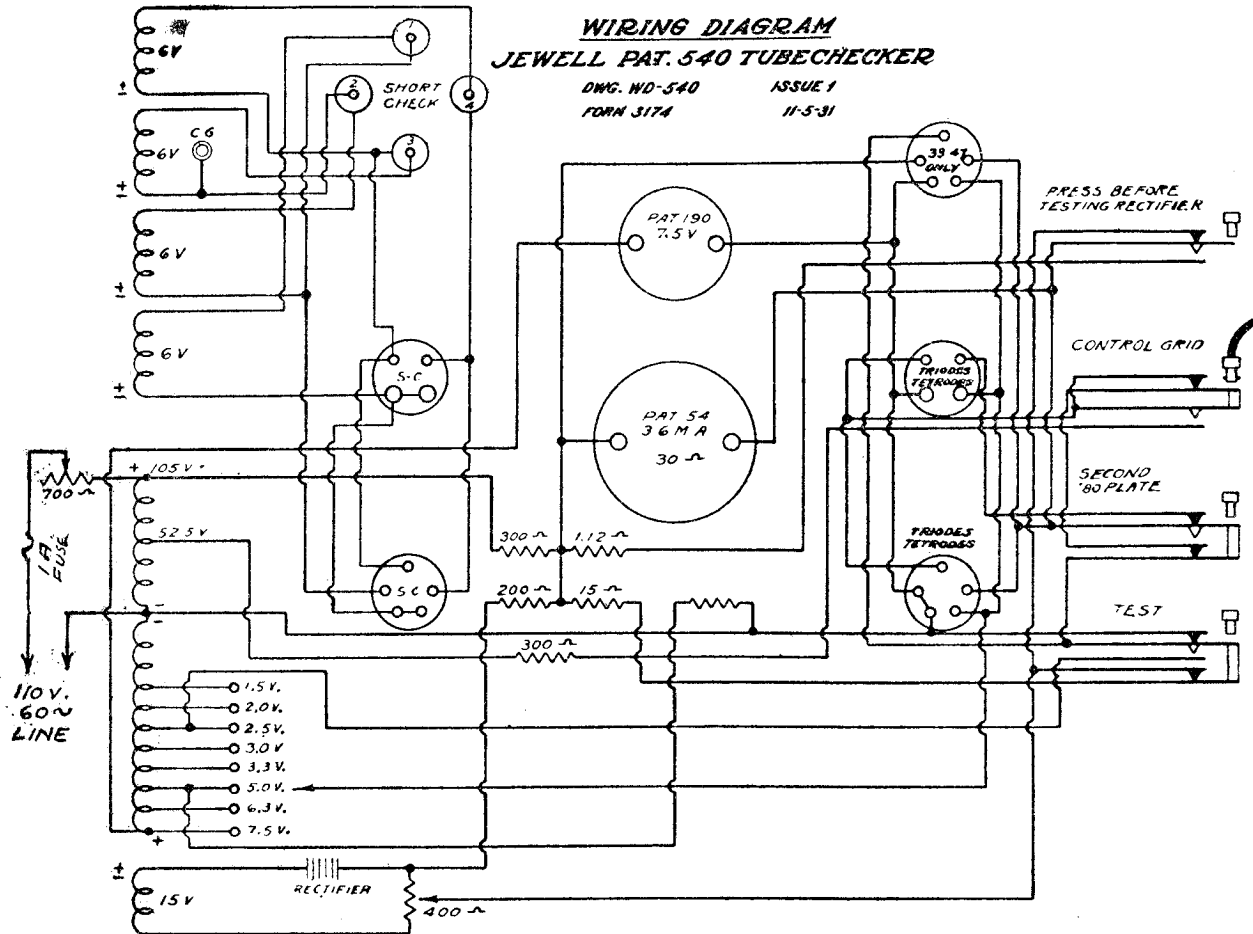


WESTON ELECTRICAL INSTRUM'T CORP.

MODEL Jewell
540
MODEL Jewell
560

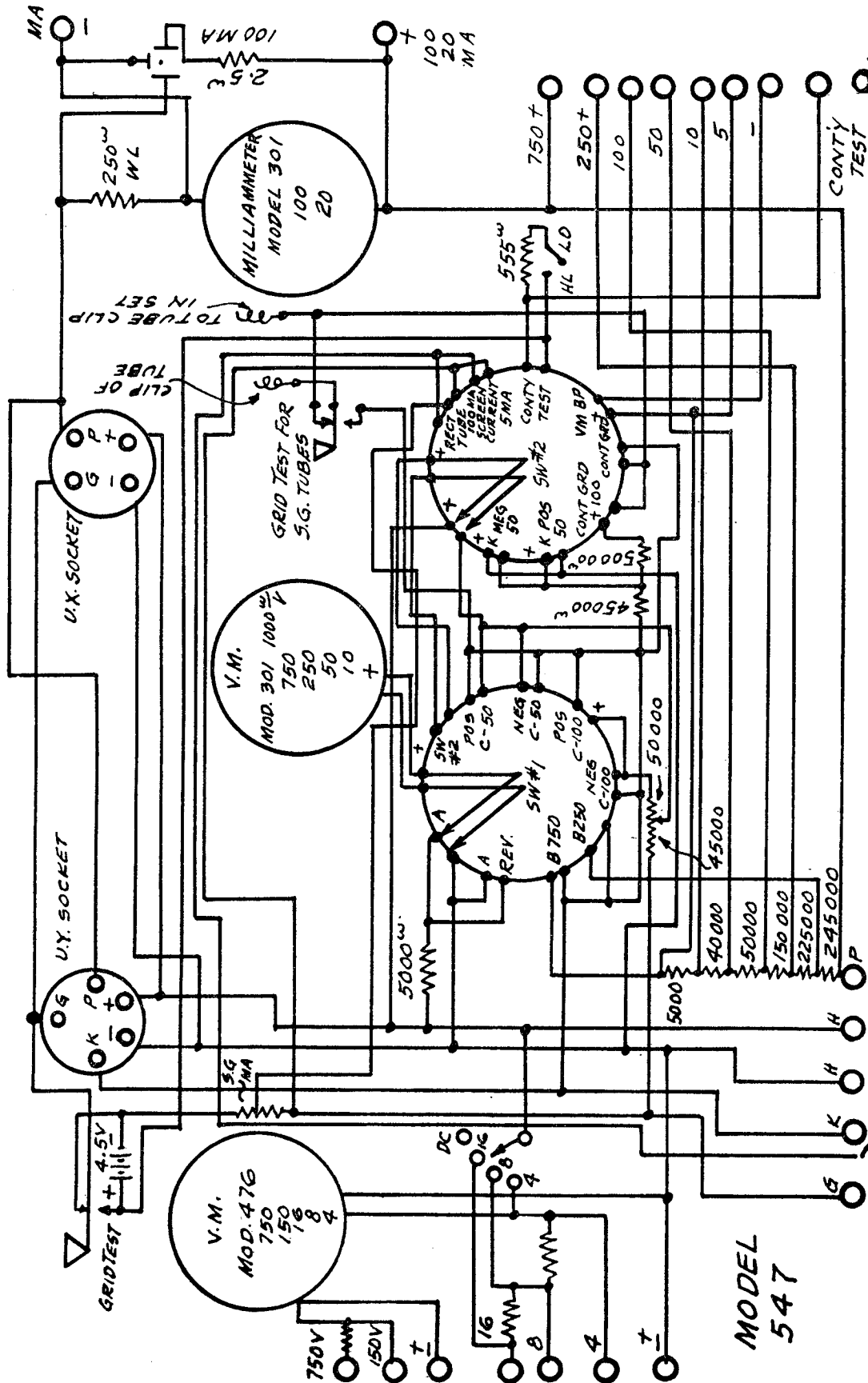
**WIRING DIAGRAM
JEWELL PAT. 540 TUBE CHECKER**

DWG. NO-540 ISSUE 1
FORM 3174 11-5-31



MODEL Weston
547

WESTON ELECTRICAL INSTRUM'T CORP.

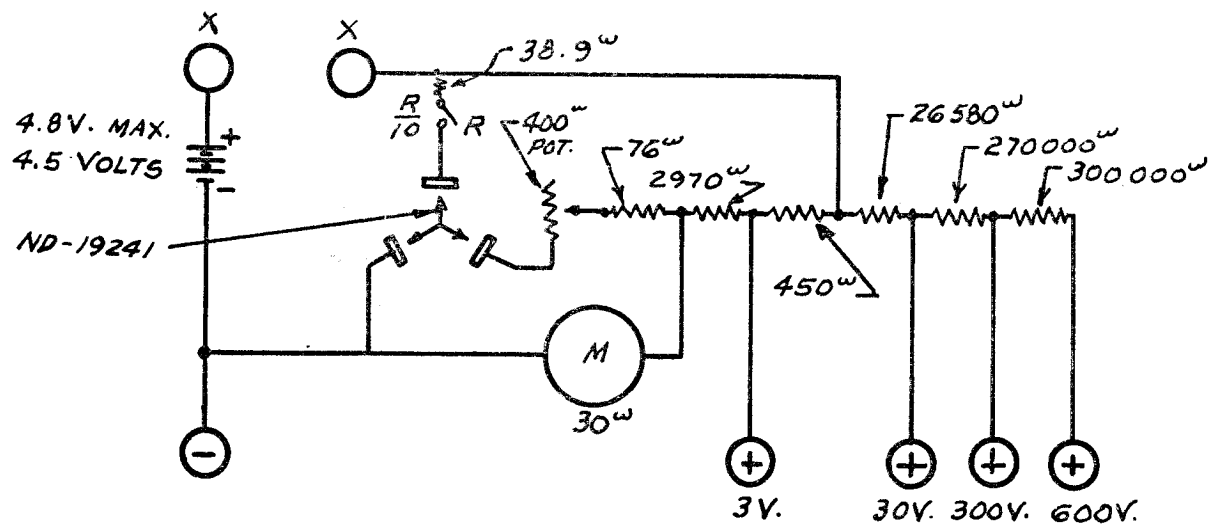
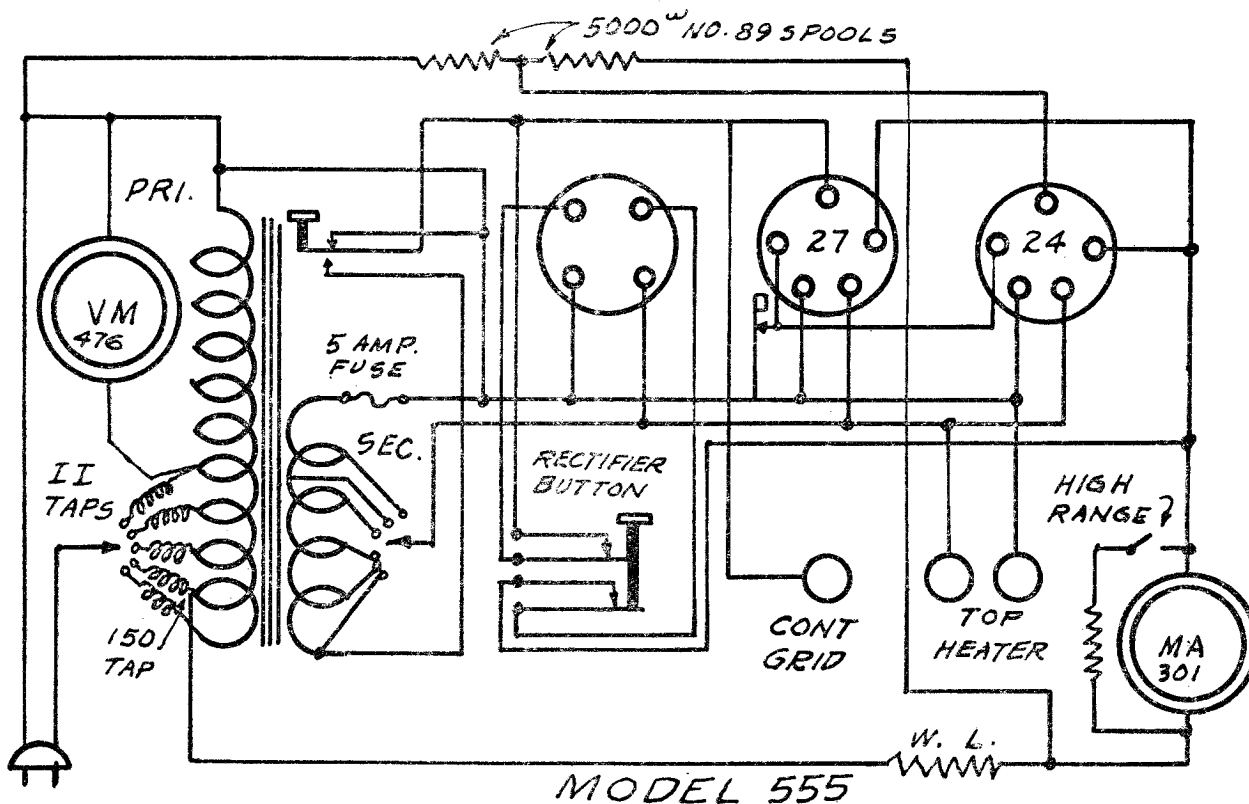


MODEL
547

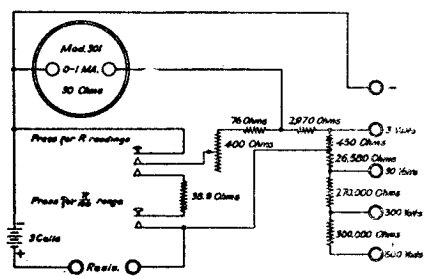
MODEL Weston 555

MODEL Weston 564

WESTON ELECTRICAL INSTRUM'T CORP.



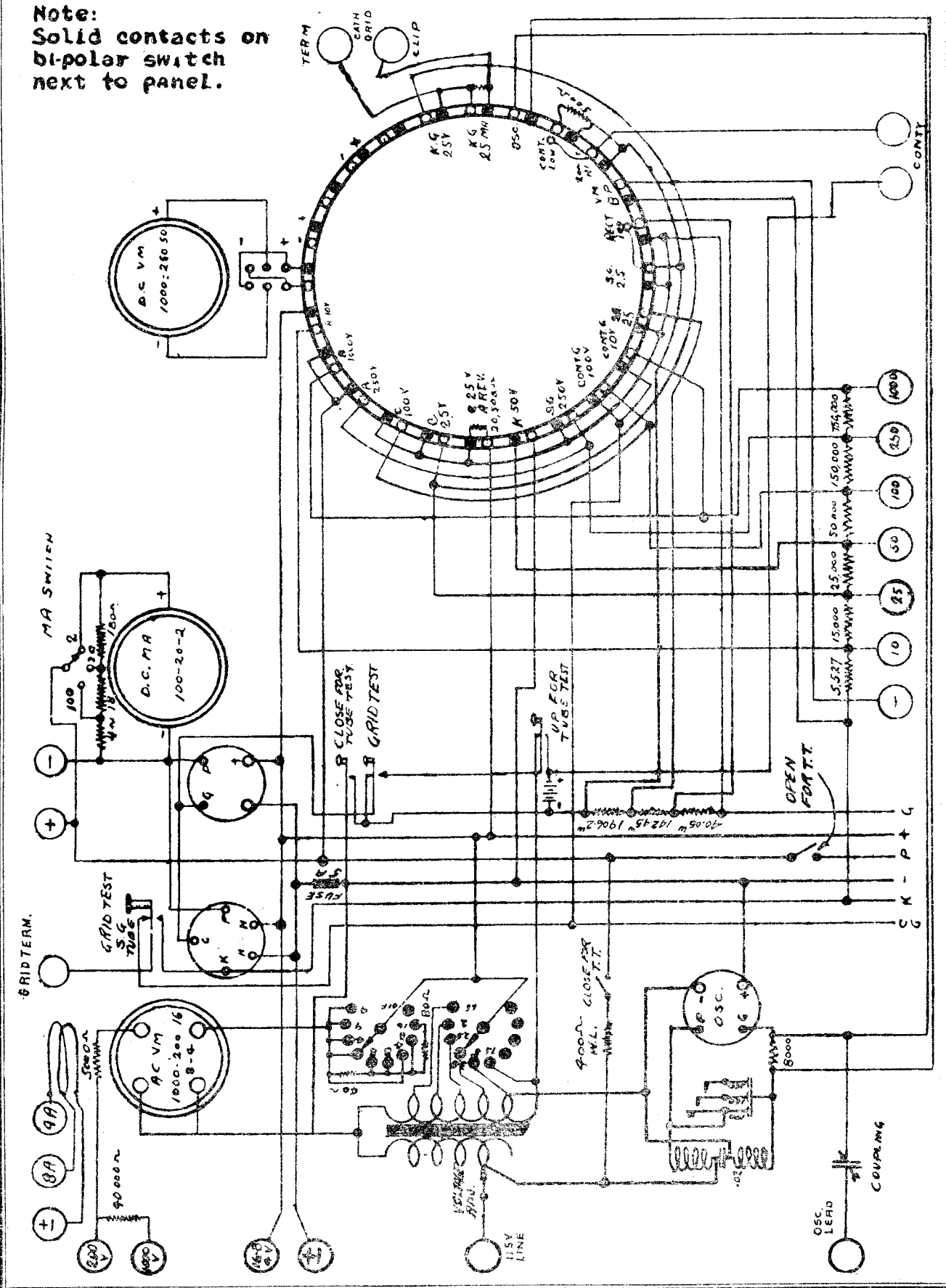
MODEL 564 OHMMETER & VOLTMETER



Schematic diagram of the Weston Model 564 Volt-Ohmmeter. Note the connections of the toggle switches in the center

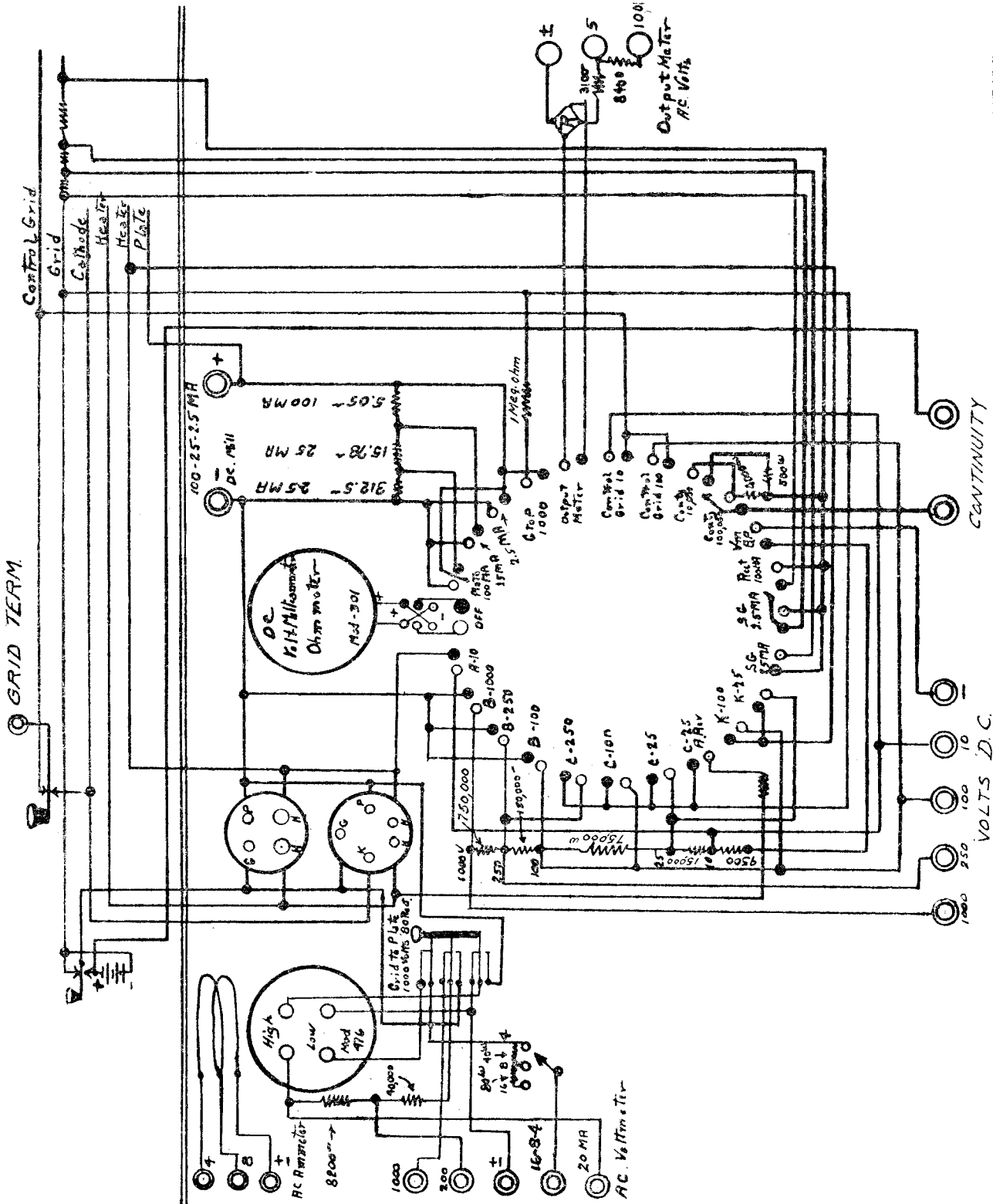
WESTON ELECTRICAL INSTRUM'T CORP.

Note: Solid contacts on bi-polar switch next to panel.



MODEL Weston 566

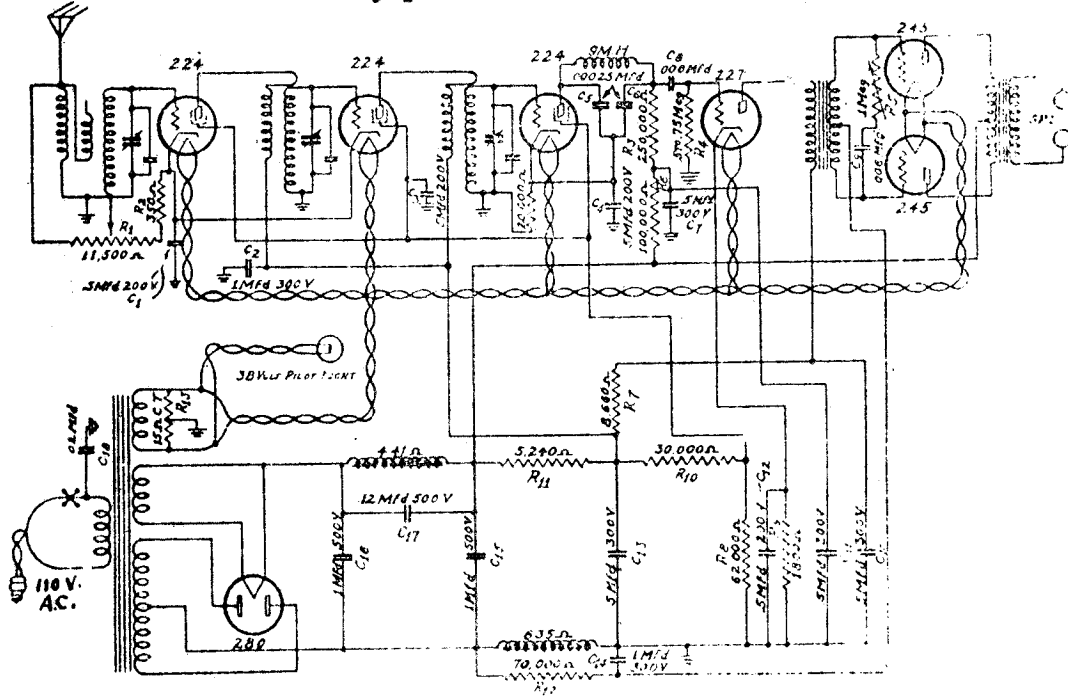
WESTON ELECTRICAL INSTRUM'T CORP.



WHOLESALE RADIO SERVICE CO., INC.
 Duo-Symphonic Junior - 1931

MODEL Duo-Symphonic Junior 1931
 MODEL Great Duo-Symphonic

Line Vol-
 tage 120.
 Vol. Cntrl
 Full

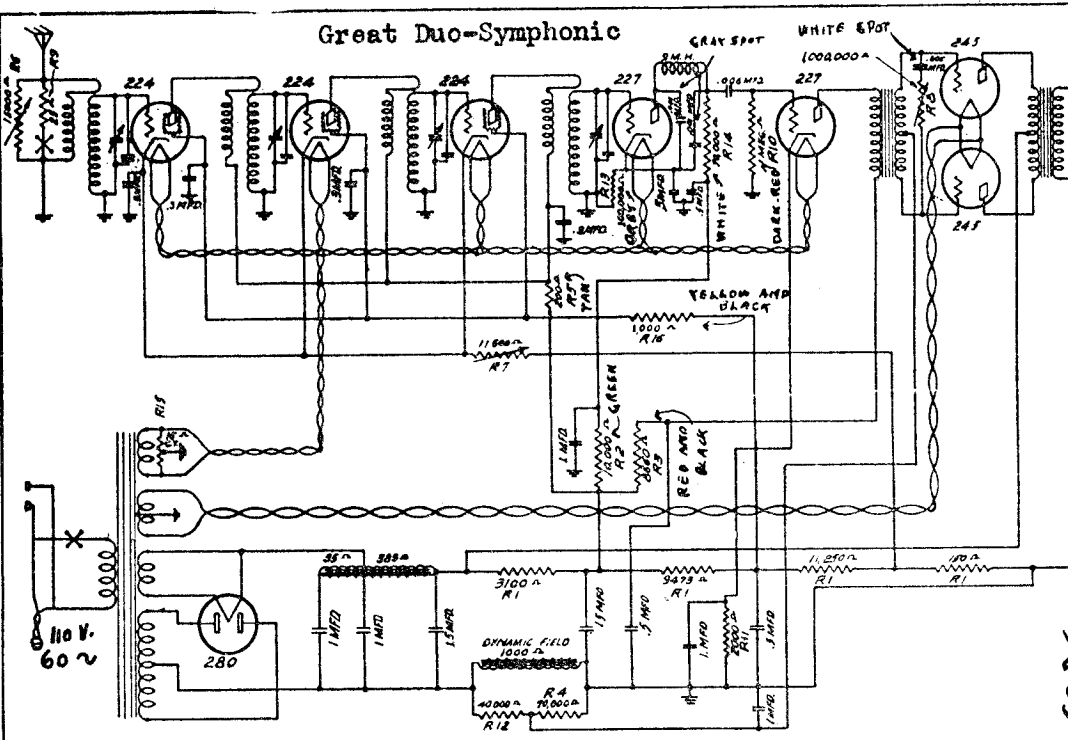


D. S. JR 1931

TYPE OF SET	NO. OF TUBES	TYPE OF TUBES	OPERATIONS INCLUDED			MATERIALS			TEST PLUG IN SOCKET OF SET		
			PAUSE	RECALL	RECALL	RECALL	RECALL	RECALL	RECALL	RECALL	RECALL
1	284	1 R.F.	2.3	1.43	3	93	3				
2	284	2 R.F.	2.3	1.43	3	93	3				
3	287	3 R.F.	2.3	1.43	3	93	3				
4	287	1 A.F.	2.3	1.43	3	93	3				
5	245	PP-AP	2.3	1.43	3	93	3				
6	245	PP-AP	2.3	1.43	3	93	3				
7	280	Rect.	4.0								

Great Duo-Symphonic

Line Vol-
 tage 117.
 Vol. Cntrl
 Full

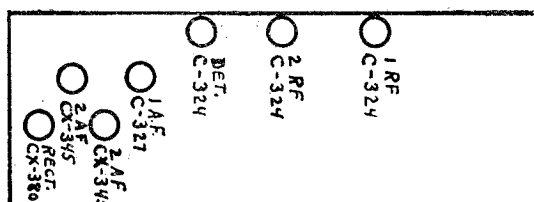
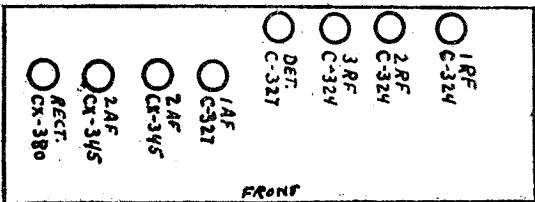


G. D. S.

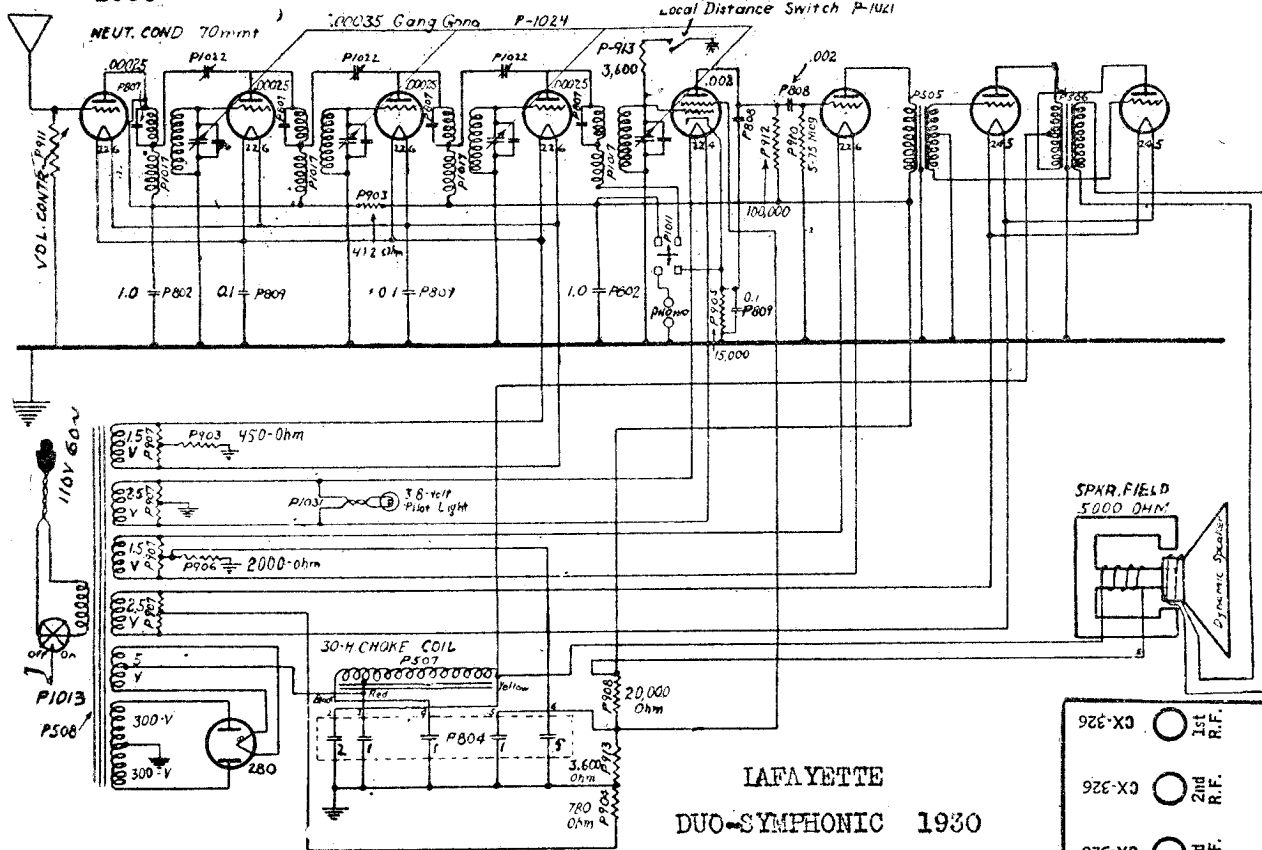
TYPE OF SET	NO. OF TUBES	TYPE OF TUBES	OPERATIONS INCLUDED			MATERIALS			TEST PLUG IN SOCKET OF SET		
			PAUSE	RECALL	RECALL	RECALL	RECALL	RECALL	RECALL	RECALL	
1	224	1 R.F.	2.3	1.43	3	93	3				
2	224	2 R.F.	2.3	1.43	3	93	3				
3	227	3 R.F.	2.3	1.43	3	93	3				
4	227	1 A.F.	2.3	1.43	3	93	3				
5	245	PP-AP	2.3	1.43	3	93	3				
6	245	PP-AP	2.3	1.43	3	93	3				
7	280	Rect.	4.0								

Great Duo-Symphonic

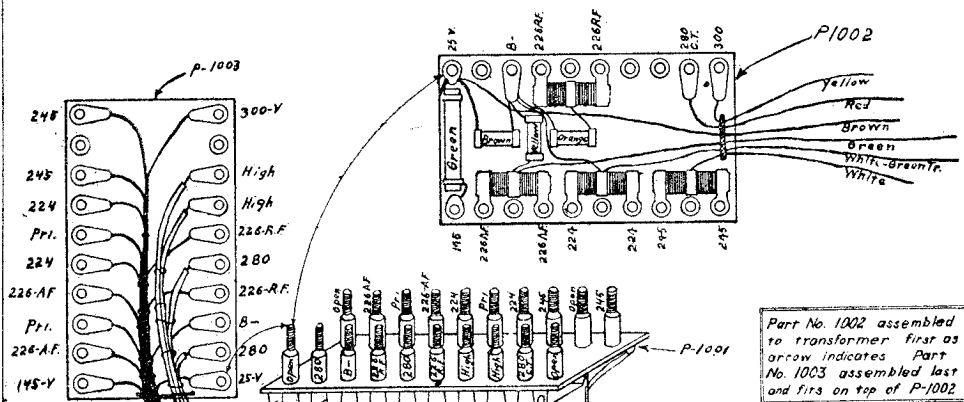
Duo-Symphonic Junior - 1931



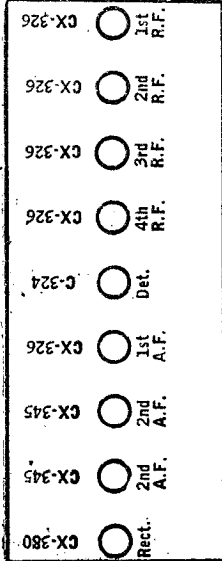
MODEL Duo-Symphonic 1930
WHOLESALE RADIO SERVICE CO., INC.



LAFAYETTE
 DUO-SYMPHONIC 1930



Power Transformer and Terminal Plate Assembly.



Part No. 1002 assembled to transformer first as arrow indicates Part No. 1003 assembled last and fits on top of P-1002

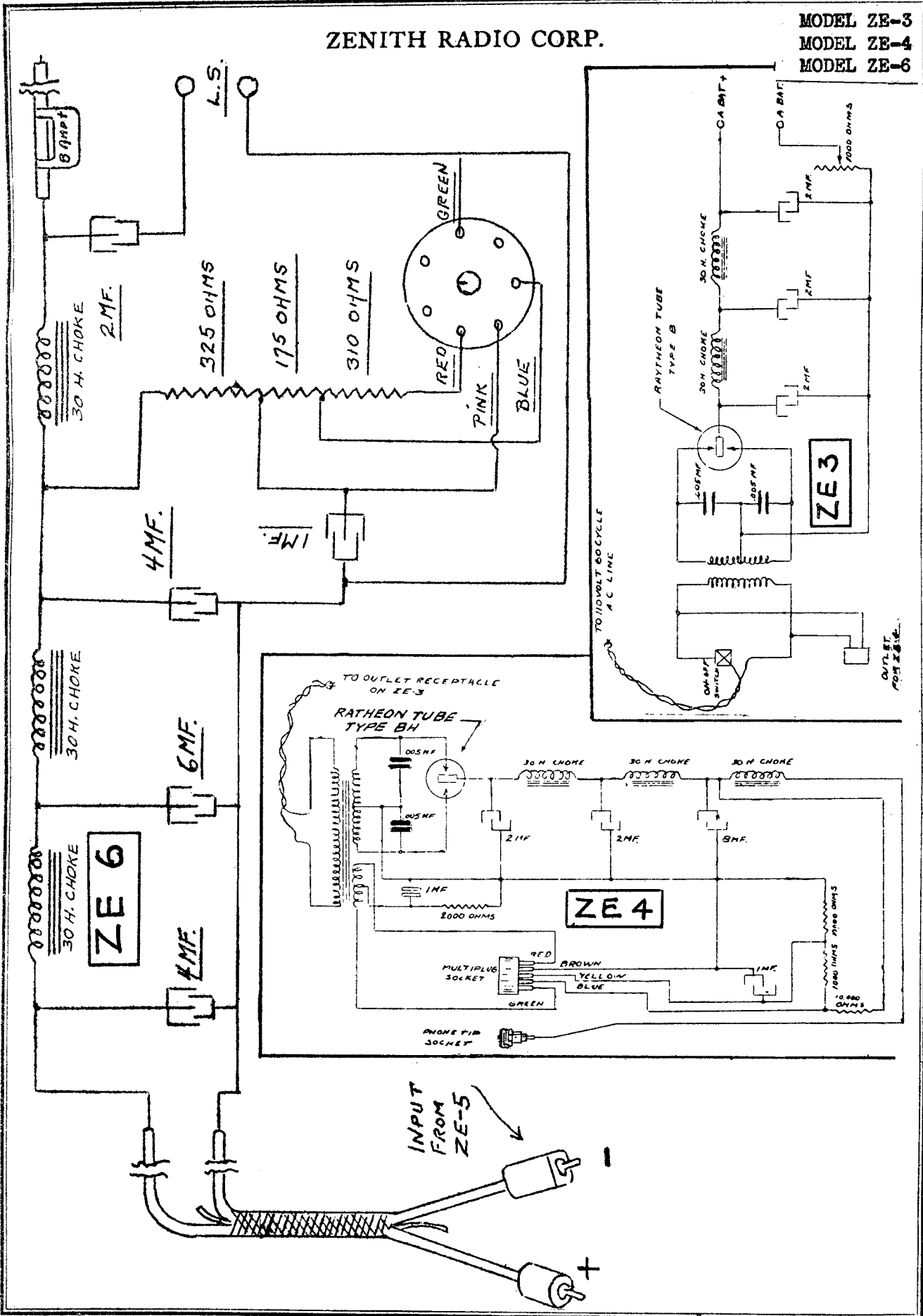
OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET								
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Sreen Current	Cathode Volts	Normal Ma.	Grid Test Ma.	
226	1st R.F.	1.35	116	8.5				4.7	8.7	
226	2nd R.F.	1.35	116	8.5				4.7	8.7	
226	3rd R.F.	1.35	116	8.5				4.7	8.7	
226	4th R.F.	1.35	116	8.5				4.7	8.7	
224	Det.	2.2	80	1.3	15			—	—	
226	1st A.F.	1.4	110	1.0				4.0	5.0	
245	2nd A.F.	2.2	232	42				27	32	
245	2nd A.F.	2.2	232	42				27	32	
280	Rect.	4.6						84		

Line Voltage During Test—115 Volts.

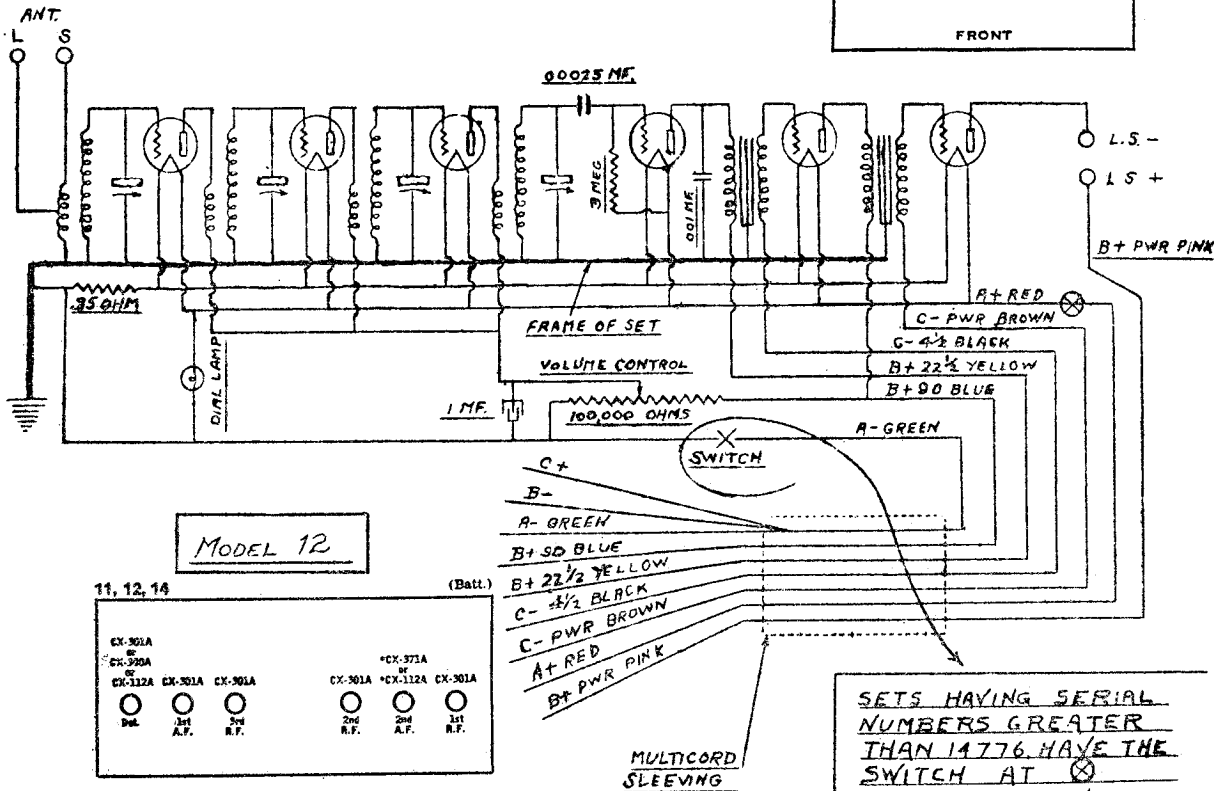
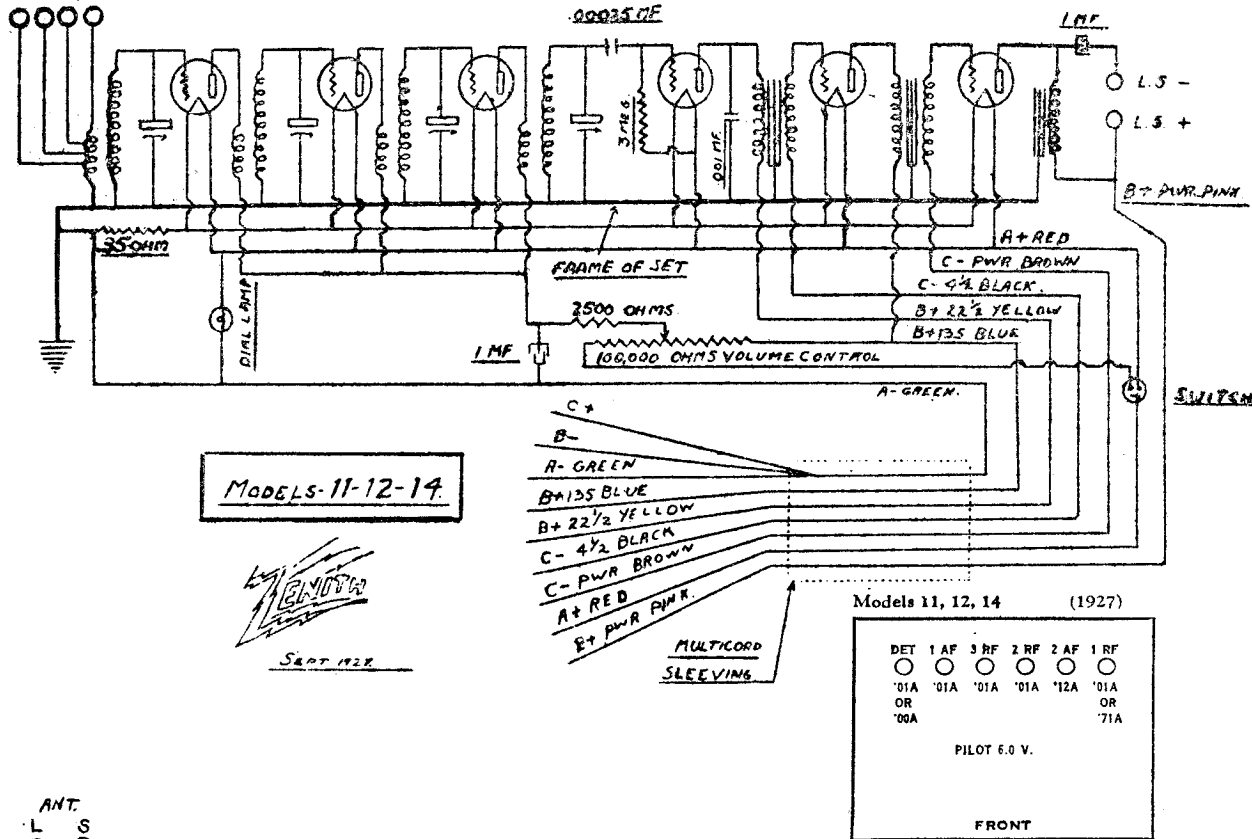
ZENITH RADIO CORP.

MODEL ZE-3
MODEL ZE-4
MODEL ZE-6



ZENITH RADIO CORP.

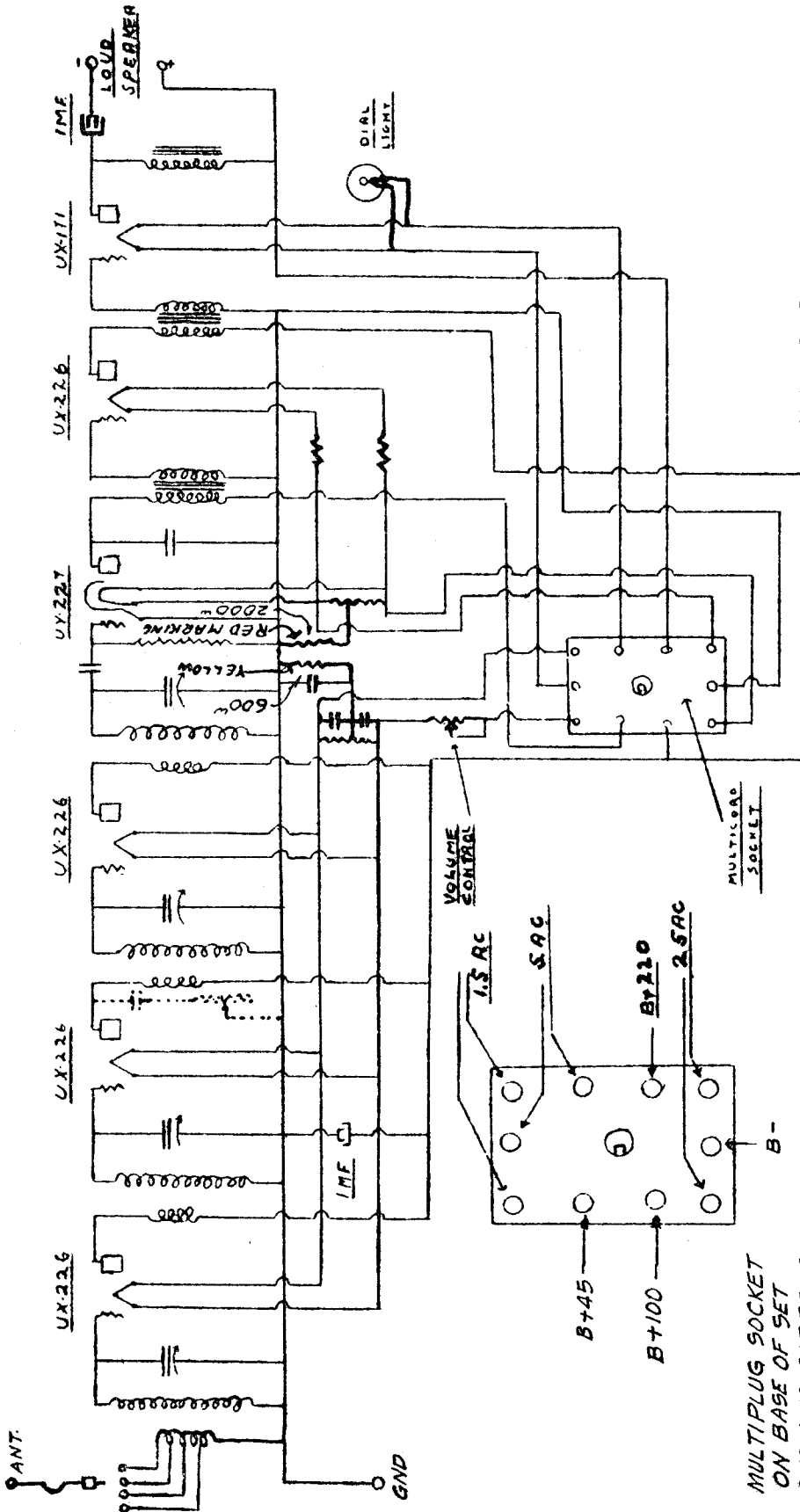
MODEL 11,12,14
1st Type
Receiver Schematic
MODEL 12
2nd Type
Receiver Schematic



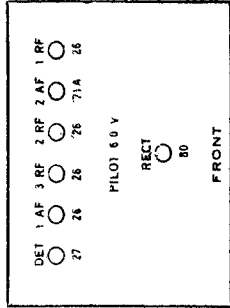
SETS HAVING SERIAL NUMBERS GREATER THAN 14776 HAVE THE SWITCH AT X IN THE A+ WIRE

ZENITH RADIO CORP

MODEL 11-E, 14-E
Receiver Schematic



Models 11E, 14E, (1927)



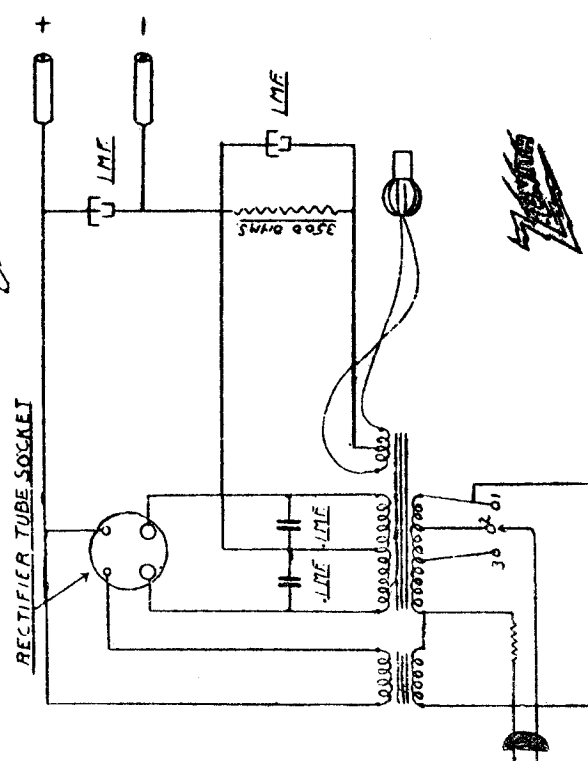
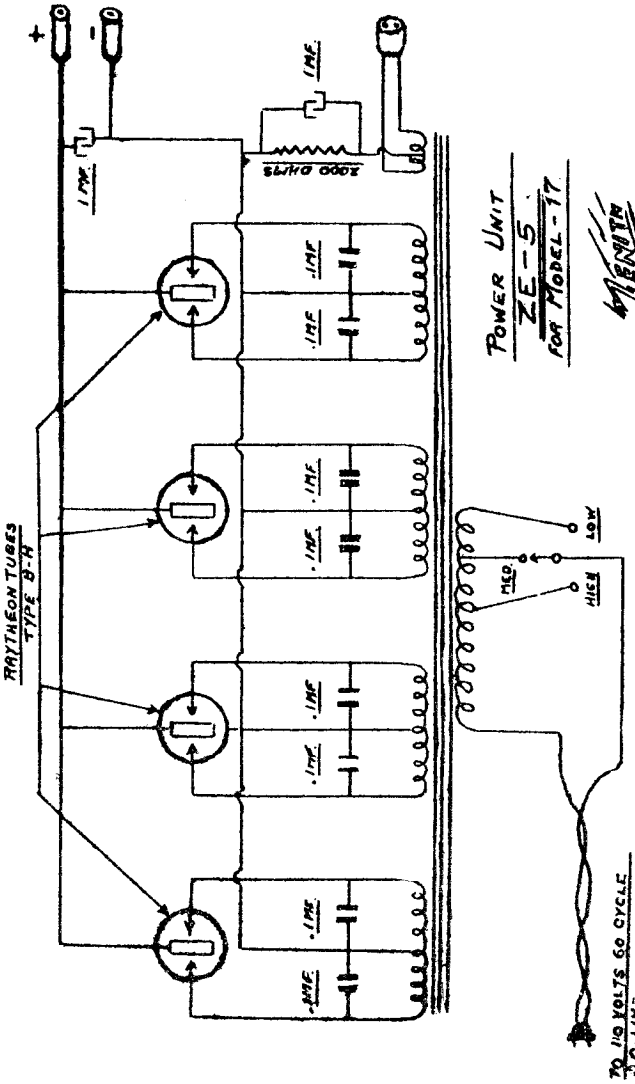
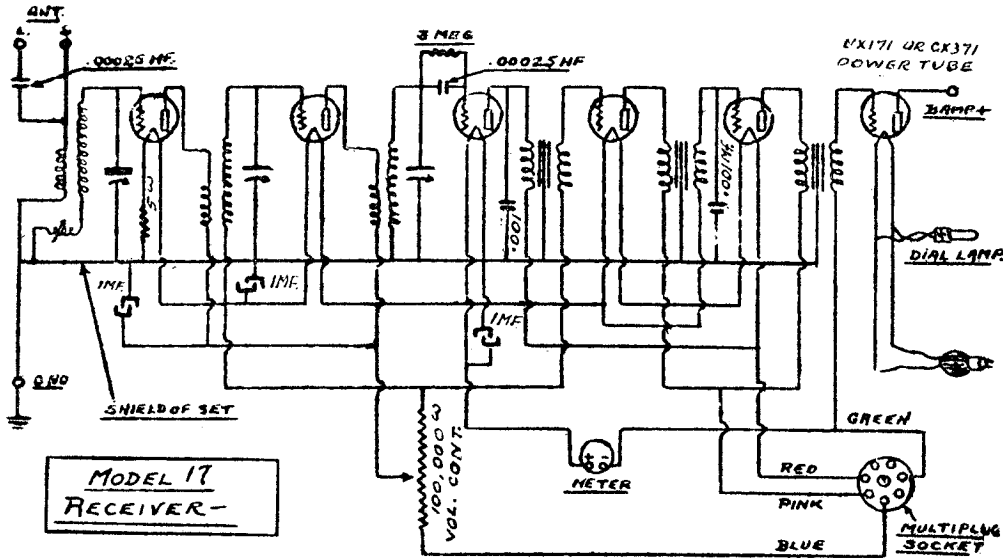
RECT. TUBE 15 IN
POWER PACK

VOLUME CONTROL SHOWN
IN DOTTED LINES USED
ON MODELS 11E ABOVE
48657 TO 51050 AND
14E FROM 605420 TO 607147

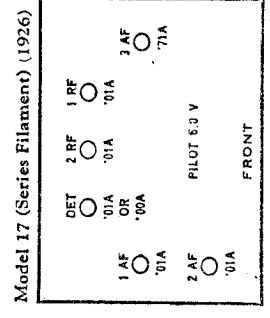
MULTIPLUG SOCKET
ON BASE OF SET
SHOWING CORRECT
VOLTAGES UNDER
LOAD OF SET

MODEL 17 Schematic
MODEL ZE-5 Power Units

ZENITH RADIO CORP.

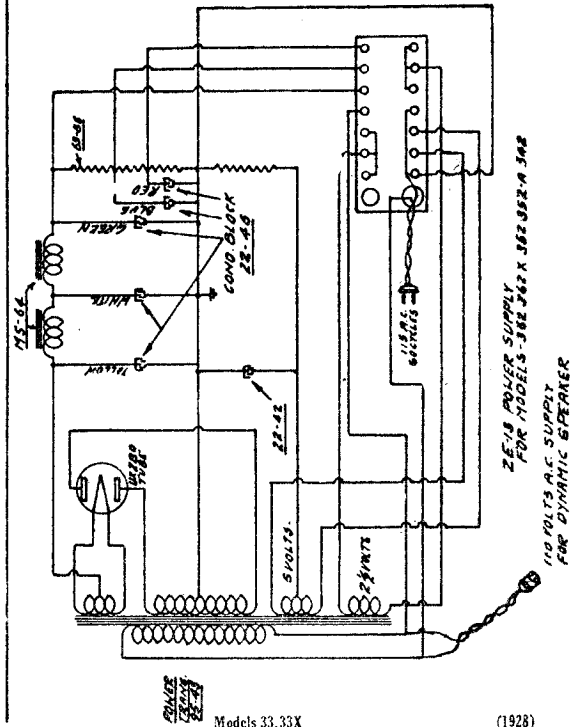
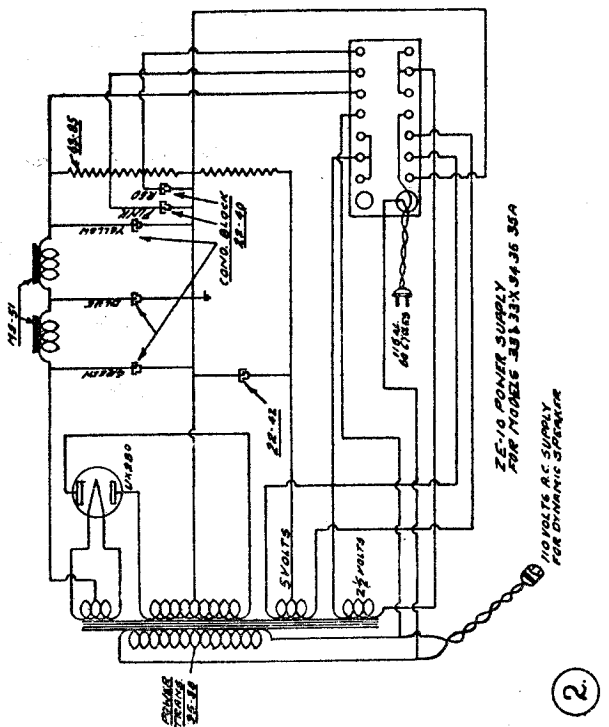
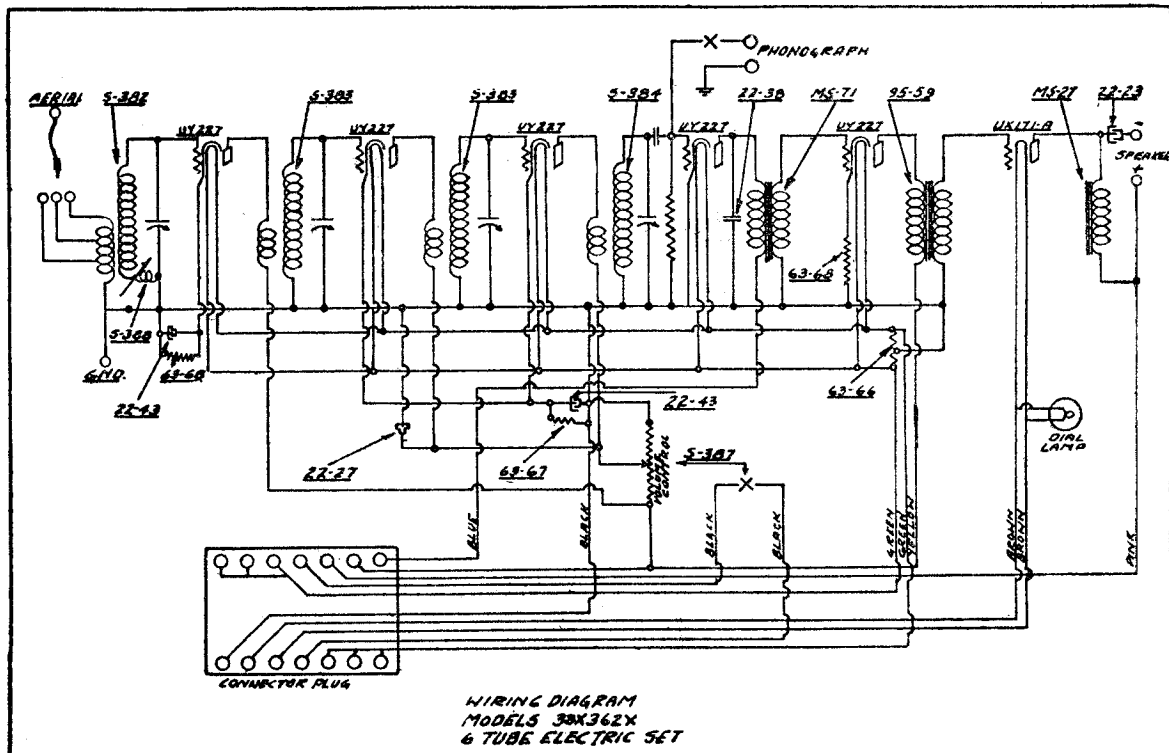


SPECIAL ZE-5
POWER SUPPLY
USING SINGLE
RECTIFYING TUBE



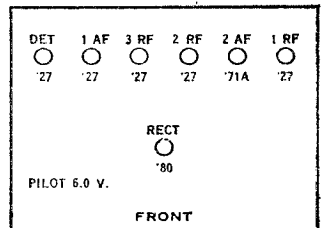
ZENITH RADIO CORP.

MODEL 33-X, 362-X
MODEL ZE-10
MODEL ZE-13



ZENITH—Models 33X-362X
Line Voltage 115

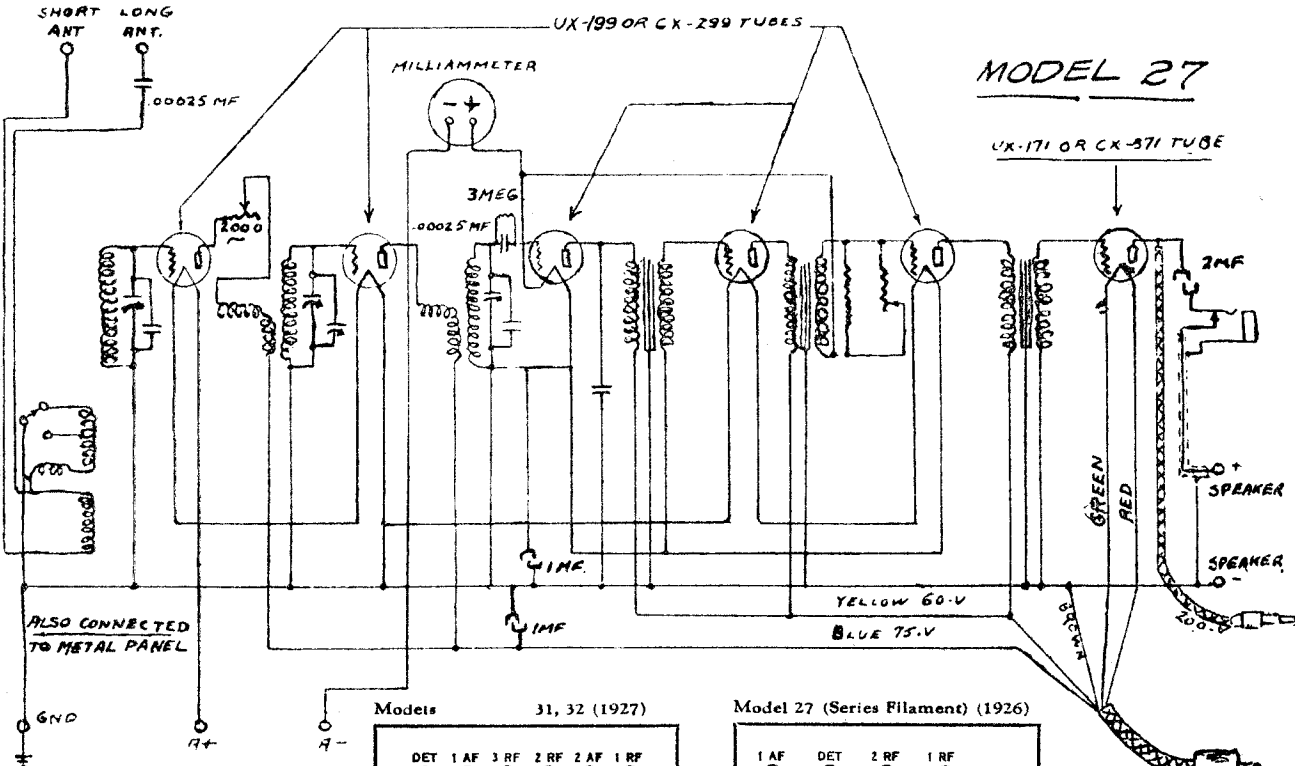
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT		TUBE IN TESTER							
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	227	1st. R.F.	2.05	102	6	-	-	2.9	4.1	1.2		
2	227	2nd. R.F.	2.05	102	5	-	-	3.8	6.8	3.0		
3	227	3rd. R.F.	2.05	102	5	-	-	3.8	6.8	3.0		
4	227	Detector	2.00	40	0	-	-	2.3	2.5	0.2		
5	227	1st. A.F.	2.05	94	5	-	-	2.6	3.7	1.1		
6	171A	2nd. A.F.	4.90	170	35	-	-	17.0	18.0	1.0		
	280	Rectifier	4.50	-	-	-	-	20.0	-	-		



CX-330 used in separate power unit.

MODEL Super-Zenith 27
MODEL 31,32 Battery

ZENITH RADIO CORP.



Models 31, 32 (1927)

DET	1 AF	3 RF	2 RF	2 AF	1 RF
'01A	'01A	'01A	'01A	'12A	'01A
OR	'09A				OR
					'71A

PILOT 6.0 V.

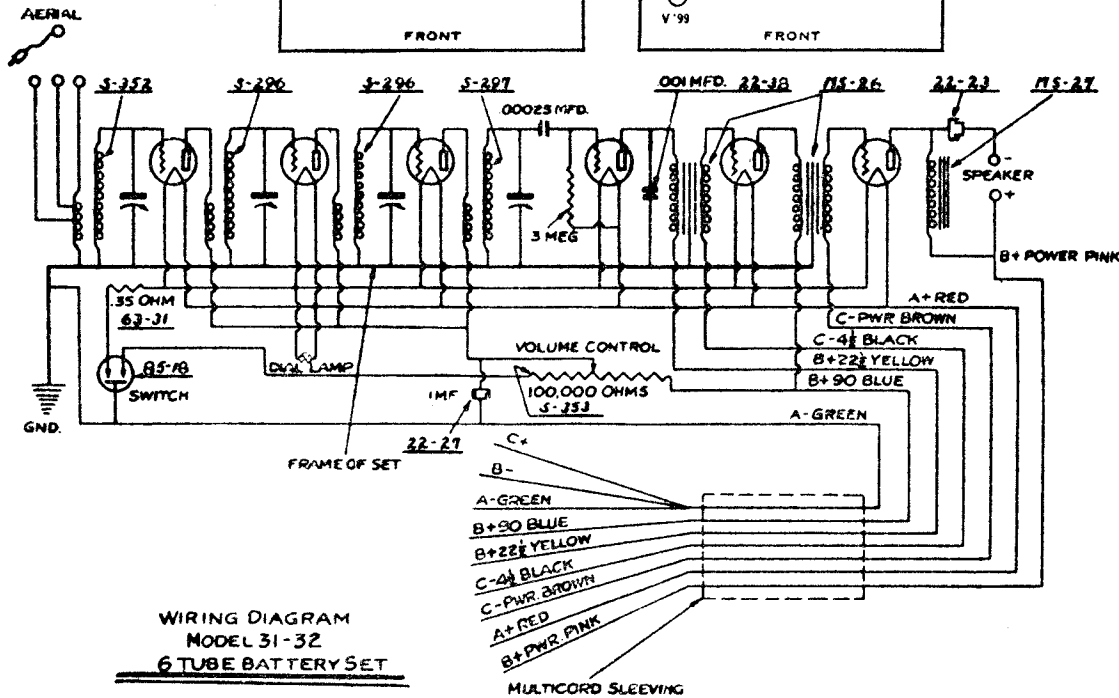
FRONT

Model 27 (Series Filament) (1926)

1 AF	DET	2 RF	1 RF
V'99	V'99	V'99	V'99
3 AF			
'71A			
2 AF			
V'99			

PILOT 6.0 V.

FRONT

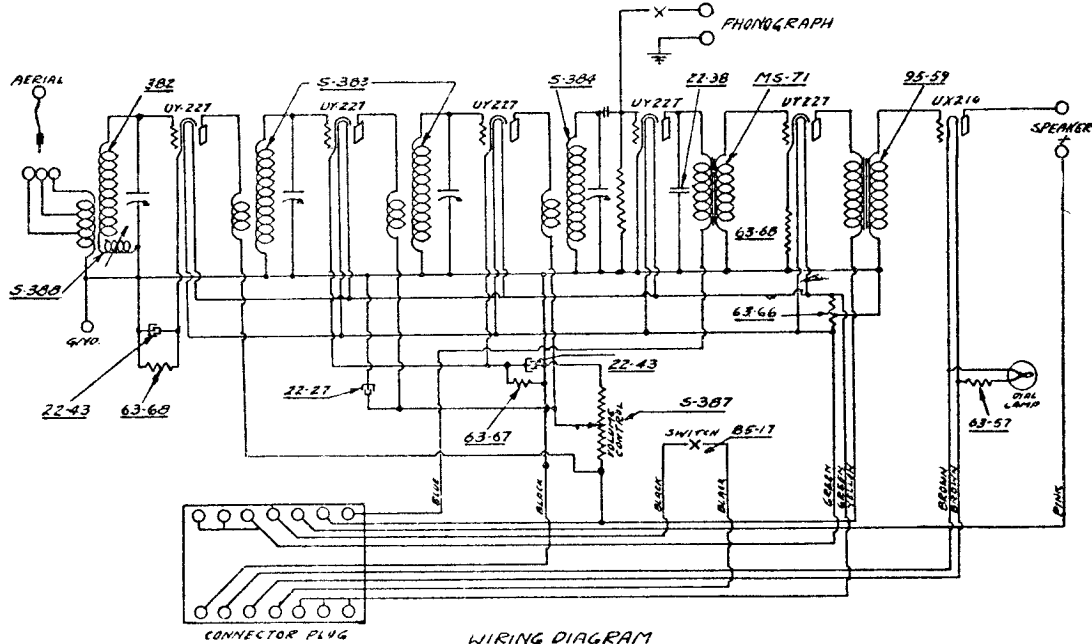
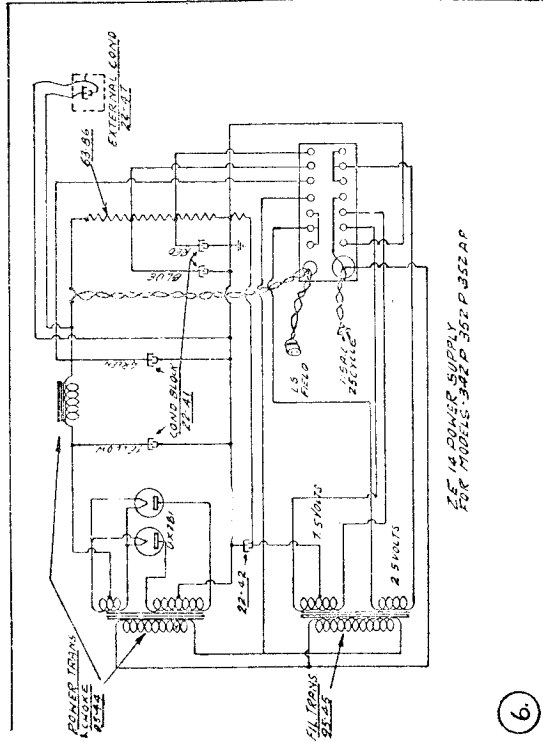
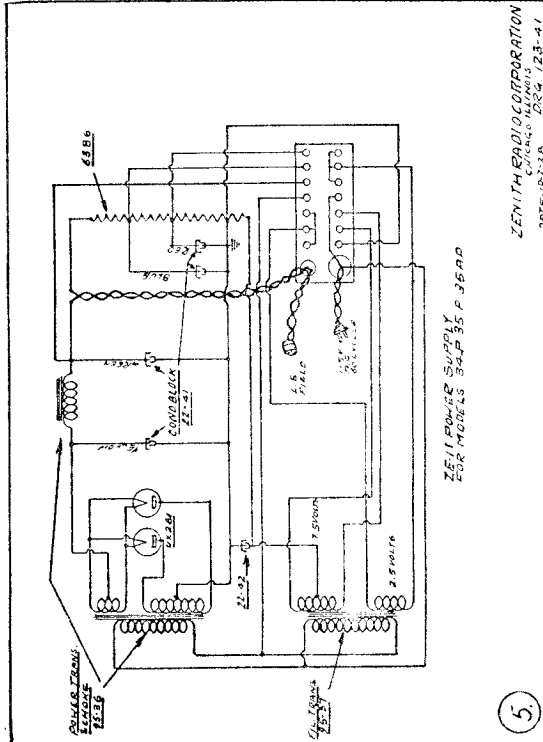


WIRING DIAGRAM
MODEL 31-32
6 TUBE BATTERY SET

MULTICORD SLEEVING

ZENITH RADIO CORP.

MODEL 34-P, 342-P
MODEL ZE-11
MODEL ZE-14

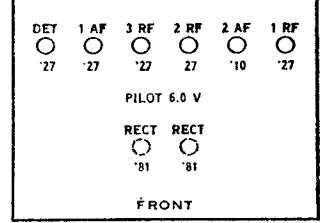


WIRING DIAGRAM
MODELS 34P-342P
6 TUBE ELECTRIC SET

ZENITH—Models 34P-342P
Line Voltage 115

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS PLUG & SOCKET OF SET							
			TUBE OUT A VOLTS	TUBE OUT B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE MA TEST	PLATE MA GRID TEST	PLATE MA CHARGE
1	227	1st. B.P.	2.05	90	5.5	-	2.7	4	1.3	
2	227	2nd. R.F.	2.05	92	5.0	-	3.5	6.5	3.0	
3	227	3rd. R.F.	2.05	92	5.0	-	3.5	6.5	3.0	
4	227	Detector	2.00	40	0.0	-	2.2	2.2	0.0	
5	227	1st. A.P.	2.05	84	5.0	-	2.4	3.6	1.2	
6	210	2nd. A.P.	7.40	400	34.0	-	23	25	2.0	
7	281	Rectifier	7.25	-	-	-	42	-	-	
8	281	Rectifier	7.25	-	-	-	42	-	-	

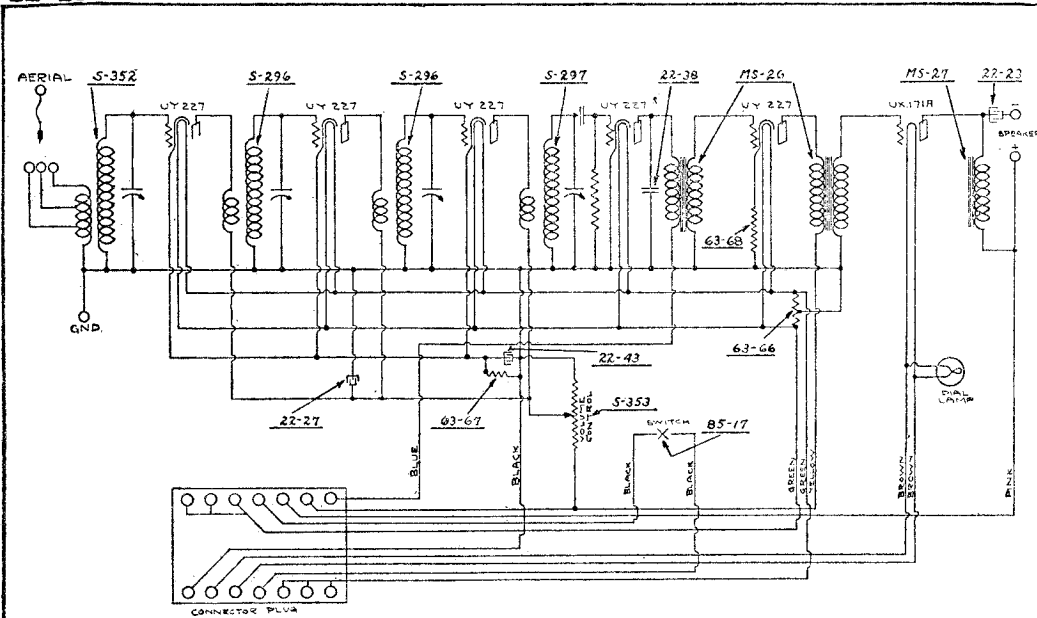
Models 34I, 342P (1928)



2 CX-381's used in separate power units.

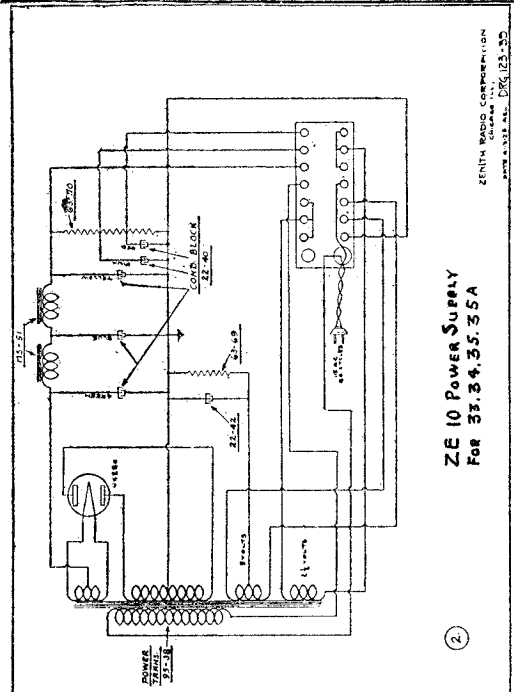
MODELS 33, 34, 35, 35-A, 342,
352, 352-A, 362
MODELS ZE-10
MODEL ZE-13

ZENITH RADIO CORP.

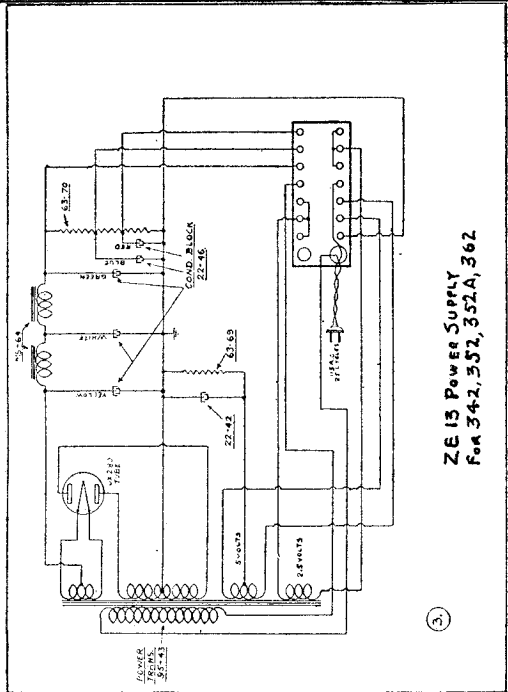


WIRING DIAGRAM
MODELS 33-34-35-35A-342-352-352A-362
6 TUBE ELECTRIC SET

ZENITH RADIO CORPORATION
CHICAGO ILLINOIS
DATE 4-12-28 A13
DRG. 123-38



ZE 10 Power Supply
For 33, 34, 35, 35A

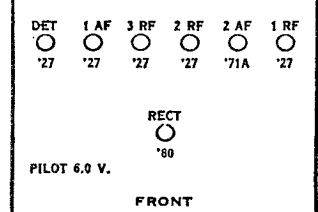


ZE 13 Power Supply
For 34, 35, 35A, 362

ZENITH—Models 33-34-35-35A-342-352-352A-362
Line Voltage 115—Volume Control Full for R. F. and
Center for A. F. on All Models

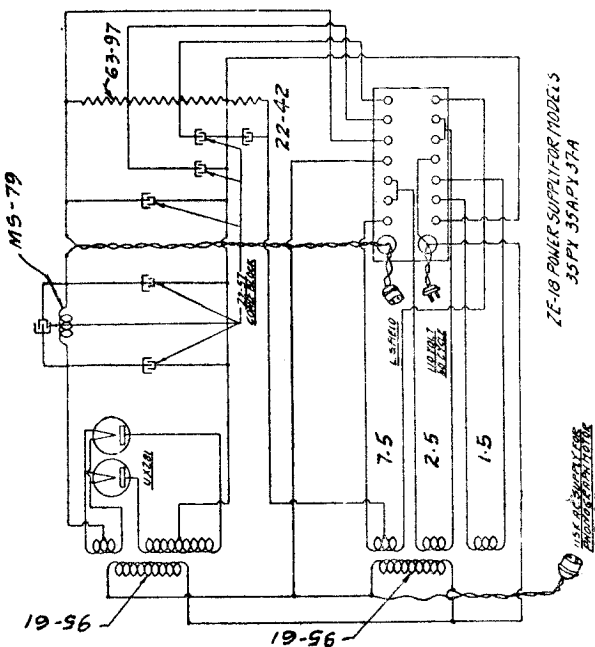
Models 34, 35, 35A, 342, 352, 352A, 362 (1928)

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st. R.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET						NORMAL PLATE M.A. GRID TEST	PLATE M.A. CHARGE
			TUBE OUT			TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS				
1	227	1st. R.F.	2.0	110	6	—	3.2	6.2	3.0	
2	227	2nd. R.F.	2.0	110	6	—	3.2	6.2	3.0	
3	227	3rd. R.F.	2.0	110	6	—	3.2	6.2	3.0	
4	227	Detector	2.0	45	0	—	3.2	3.4	1.2	
5	227	1st. A.F.	2.0	105	6	—	3.2	4.5	1.5	
6	171A	2nd. A.F.	4.75	160	40	—	15.0	16.0	1.0	
7	280	Rectifier	4.9	—	—	—	22.0	—	—	



CX-380 used in separate power unit.

MODEL 37-A
ZENITH RADIO CORP. MODELS 35-PX, 35-APX, 352-PX,
352-APX
MODEL ZE-18

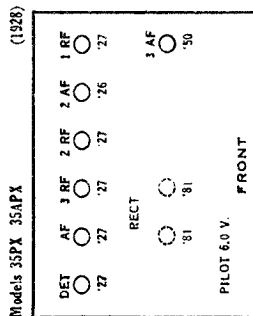


ZE-18 POWER SUPPLY FOR MODELS 35PX 35APX 37A

ZENITH RADIO CORPORATION DRMG 123-93 '24-22

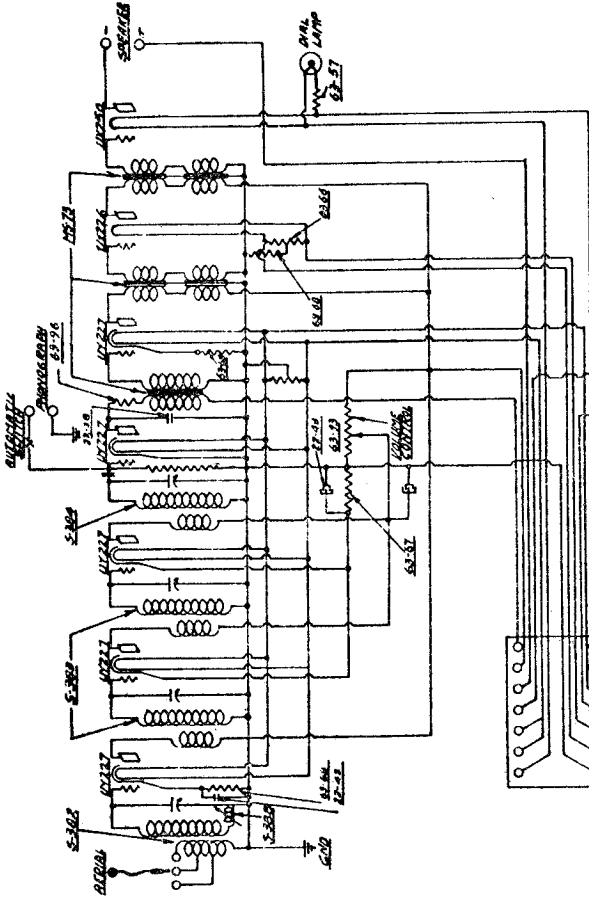
ZENITH RADIO CORPORATION DRMG 123-93 '24-22

ZENITH RADIO CORPORATION DRMG 123-93 '24-22

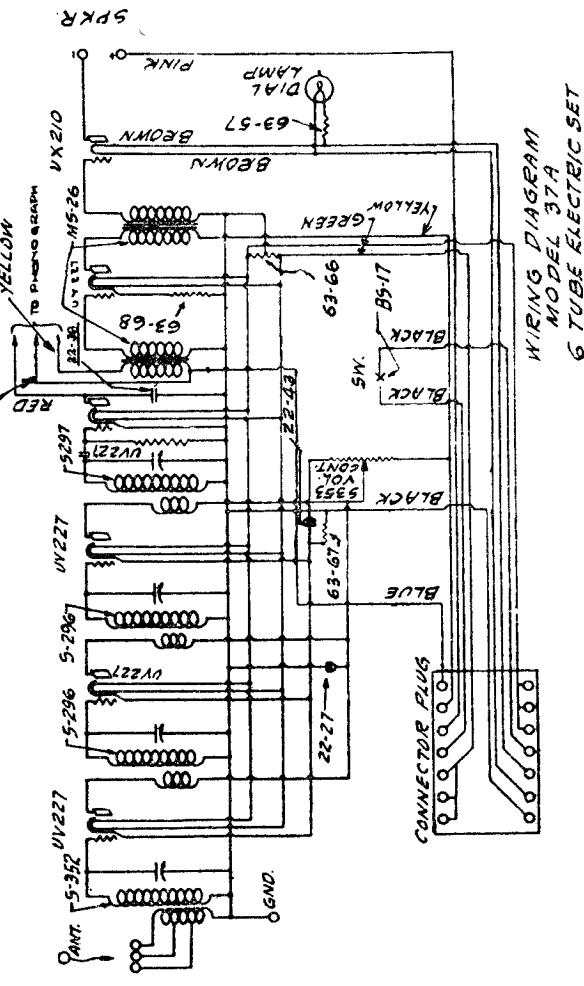


ZENITH—Models 35PX-35APX-352PX-352APX-37A
Line Voltage 115

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET	TUBE OUT	REAR PANEL PLUG IN SOCKET OF SET				TUBE IN TESTER		PLATE VOLTS	NORMAL MA	TESTER	PLATE
				A	B	C	D	A	B					MAX.	MIN.	C	D
1	227	1B1	RAY.	21	104	6		5.2	4.6	3.0	1.5		
2	227	2nd. A.F.		21	104	6		4.6	7.6	3.0			
3	227	3rd. A.F.		21	104	6		1.3	1.4	3.0			
4	227	Detect.		205	54	5		2.7	3.0				
5	507	1st. A.F.		241	85	5		32.0	3.8	3.0			
6	507	2nd. A.F.		74	355	5A		45.0	36	3.0			
7	251	Rectifier		74	355	5A							
8	251	Rectifier		74	355	5A							

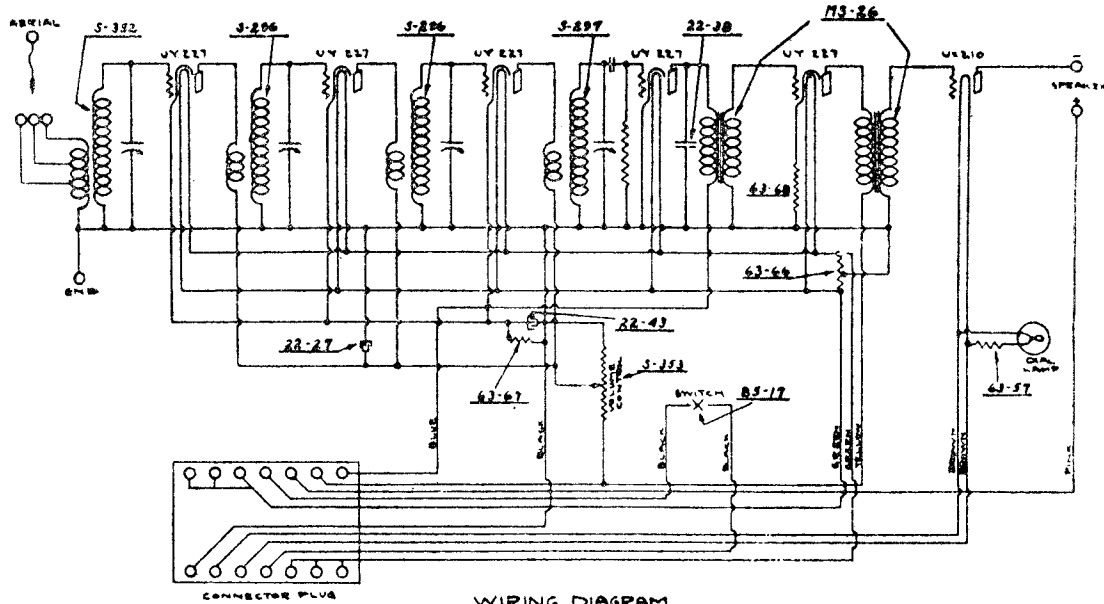


ZENITH RADIO CORPORATION DRMG 123-93 '24-22



ZENITH RADIO CORPORATION DRMG 123-93 '24-22

MODEL 35-P, 35-AP, 352-P, 352-AP
 MODEL ZE-11 for 35-P, 35-AP, 37-A ZENITH RADIO CORP.
 MODEL ZE-14 for 352-P, 352-AP

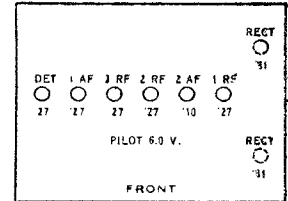


WIRING DIAGRAM
 MODELS 35P-35AP-352P-352AP
 6 TUBE ELECTRICAL SET

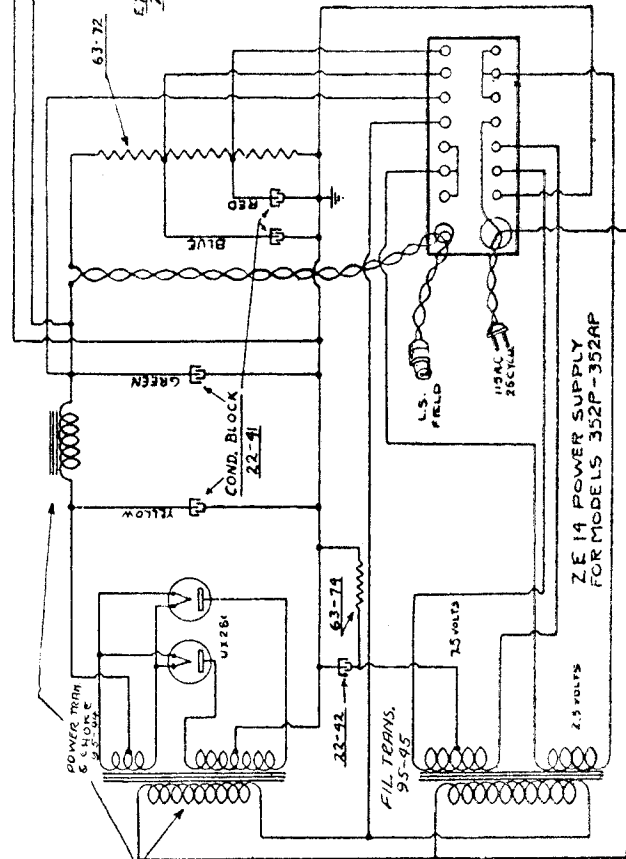
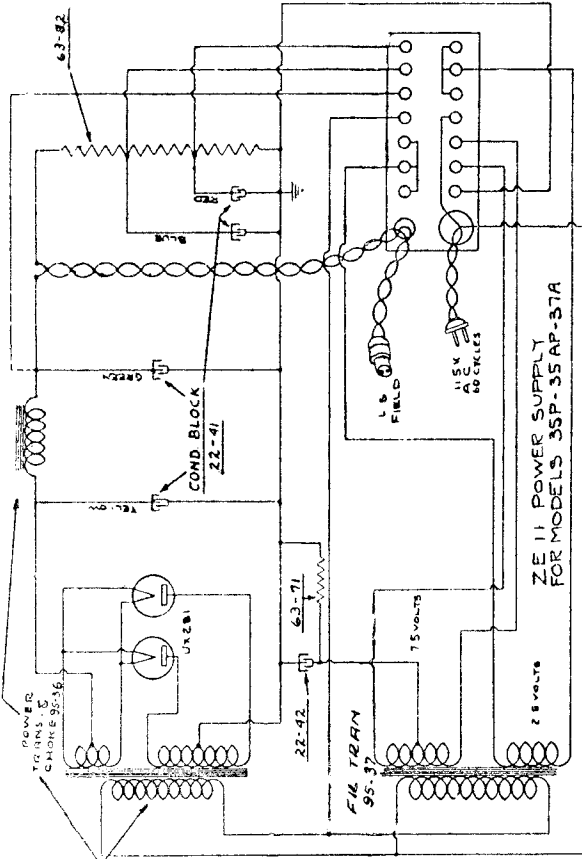
ZENITH—Models 35P-35AP-37A-352P-352AP
 Line Voltage 115

Models 35AP, 35P, 37A, 352P, 352AP (1928)

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST BY DET ETC	TUBE OUT		READINGS PLUG IN SOCKET OF SET									
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. CHANGE			
1	227	1st. R.F.			2.0	100					3.0	6.0	3.0	
2	227	2nd. R.F.			2.0	100					3.0	6.0	3.0	
3	227	3rd. R.F.			2.0	100					3.0	6.0	3.0	
4	229	DETECTOR			2.0	42					3.0	3.2	0.2	
5	210	1st. A.P.			7.2	100					3.0	2.0	1.0	
6	281	2nd. A.P.			7.25	400					45.0	25.0	2.0	
7	281				7.25						45.0			

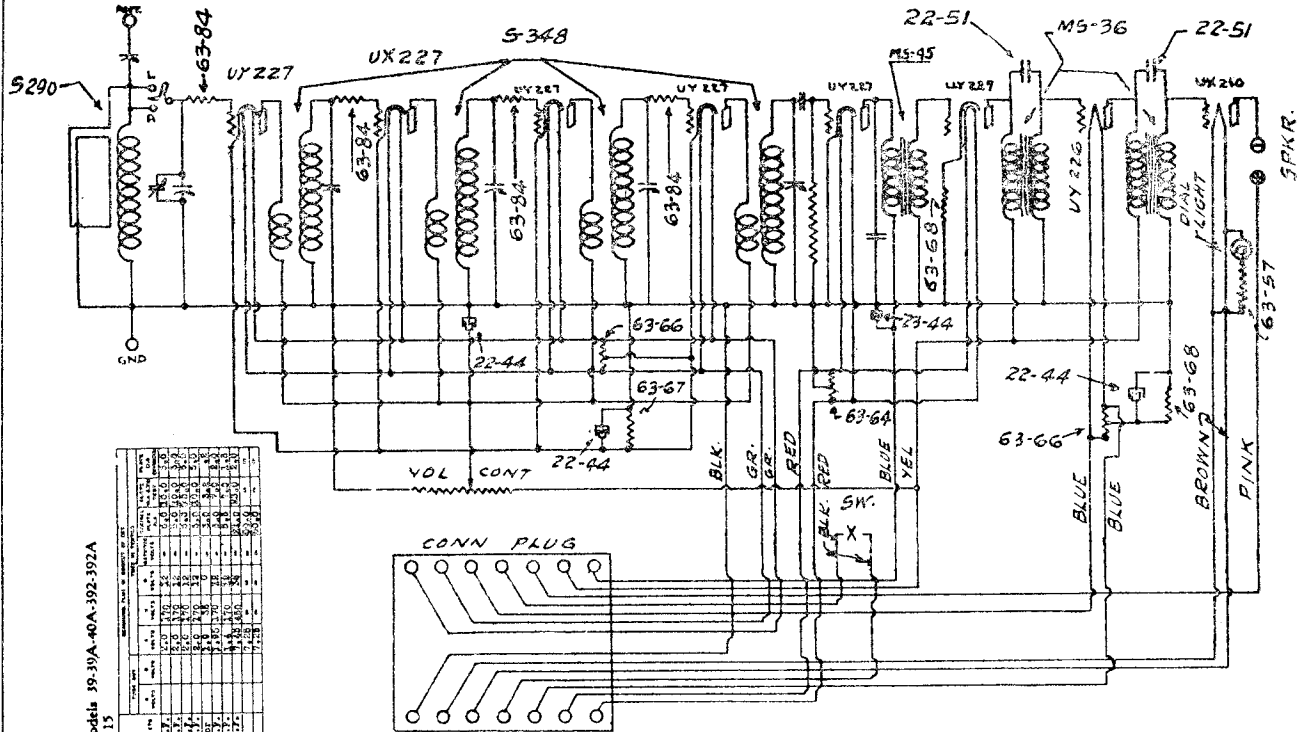


2 CX-381's used in separate power units.



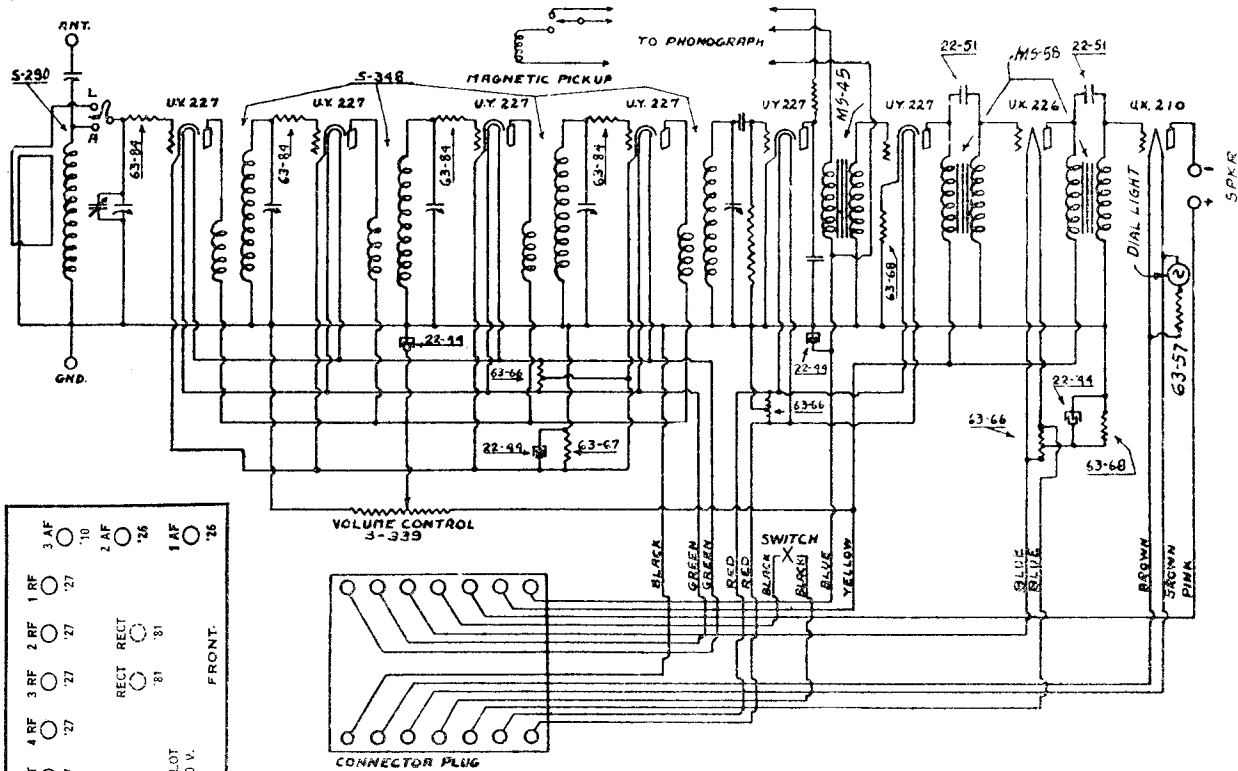
ZENITH RADIO CORP.

MODELS 39, 39-A, 392, 392-A
Receiver Schematic
MODEL 40-A
Receiver Schematic



WIRING DIAGRAM
MODELS 39-39 A-392-392A ZENITH RADIO CORPORATION
CHICAGO, ILL. U.S.A.

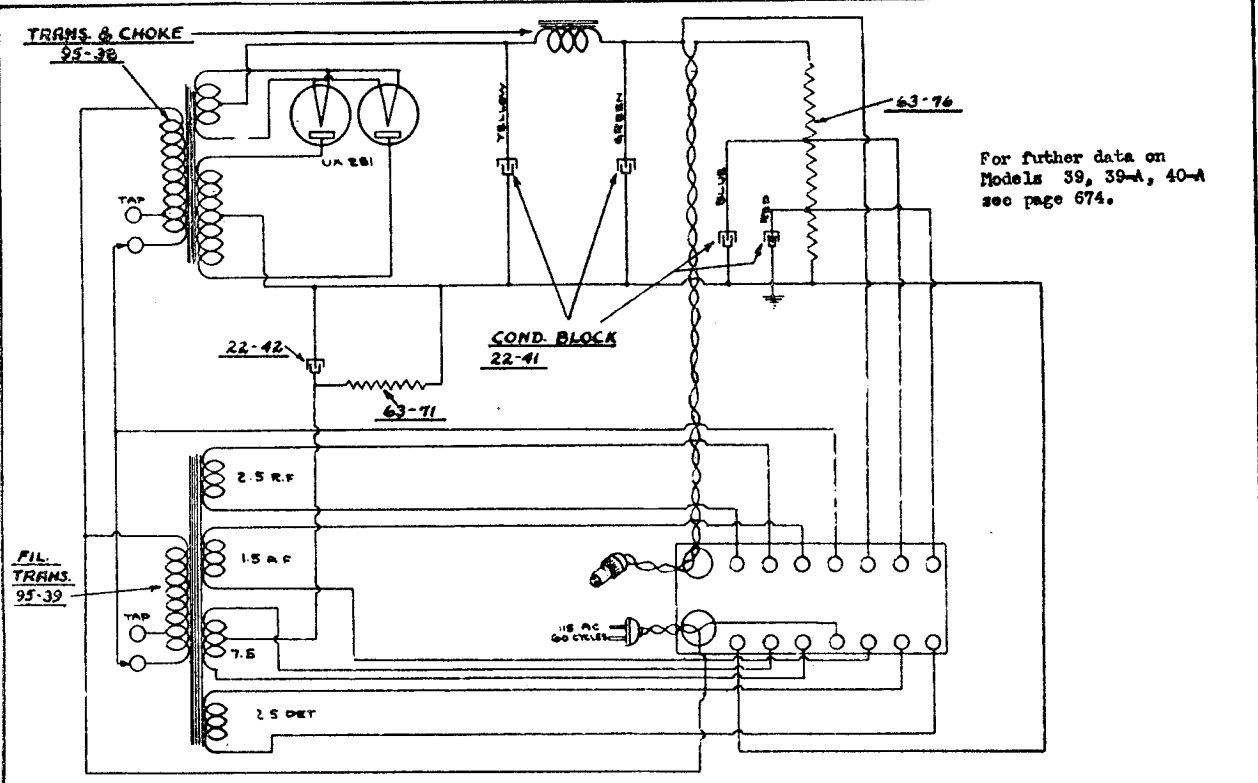
DATE 4-17-40 DRG 123-43



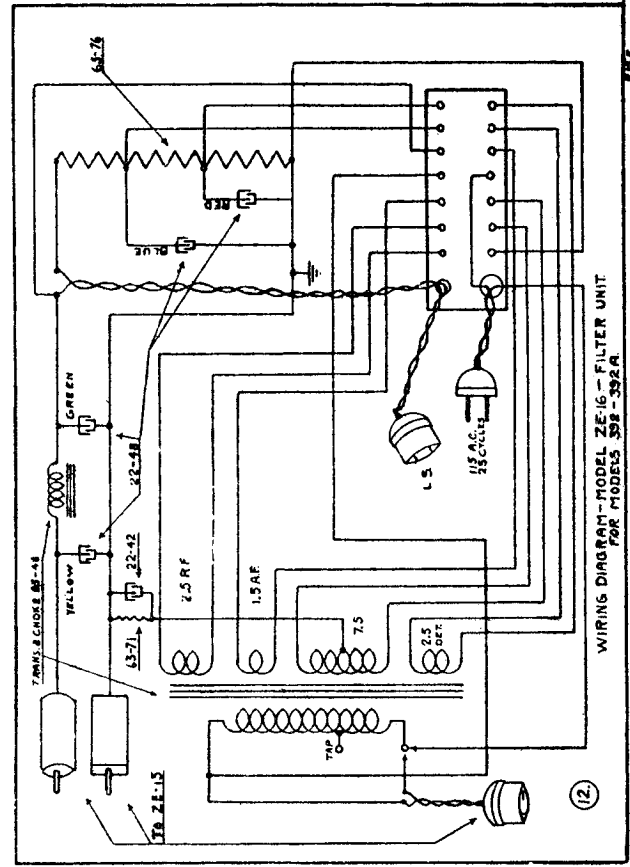
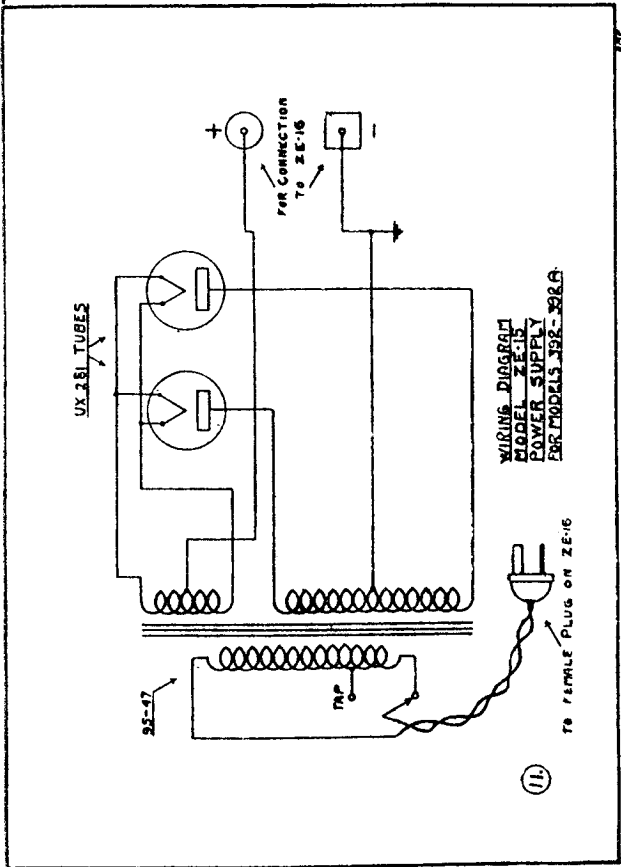
WIRING DIAGRAM
MODEL 40A

ZENITH RADIO CORPORATION
CHICAGO, ILL.
4-27-26 DRG 123-51

MODEL ZE-12 for 39, 39-A, 40-A
 MODEL ZE-15 for 392, 392-A ZENITH RADIO CORP.
 MODEL ZE-16 Filter for above



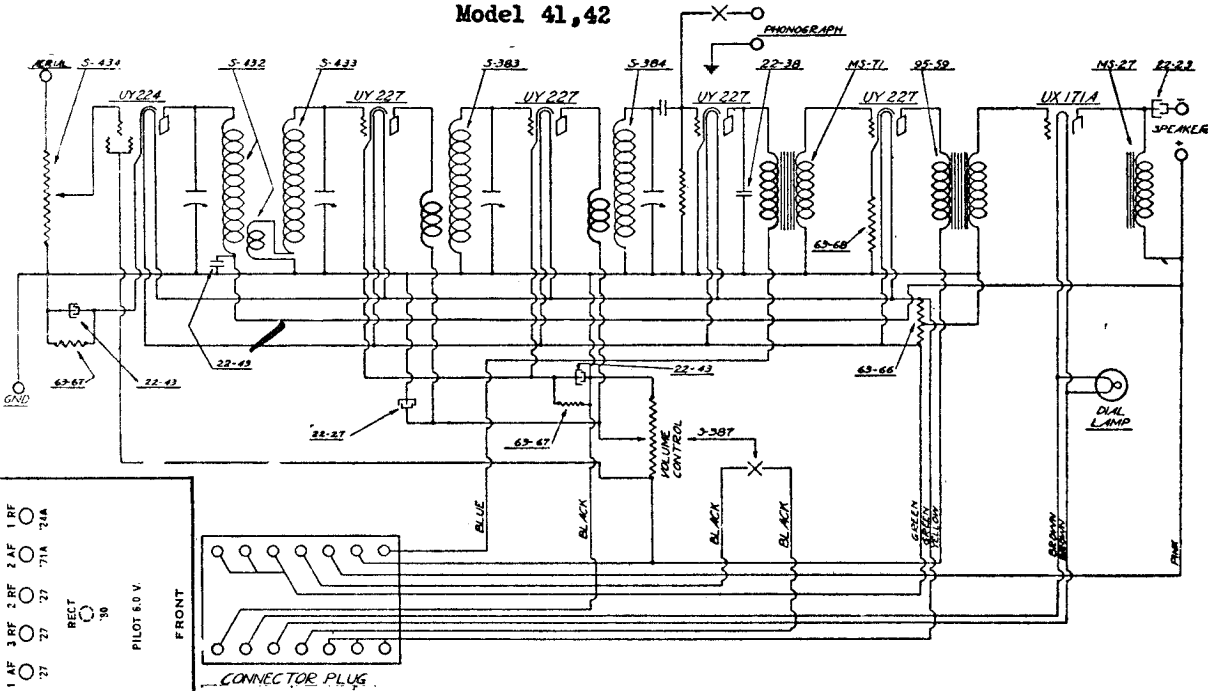
ZE 12 POWER SUPPLY FOR MODELS 39-39 A-40 A



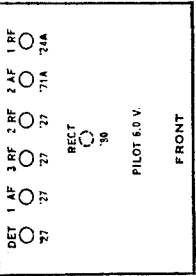
ZENITH RADIO CORP

MODEL 41,42
MODEL 422

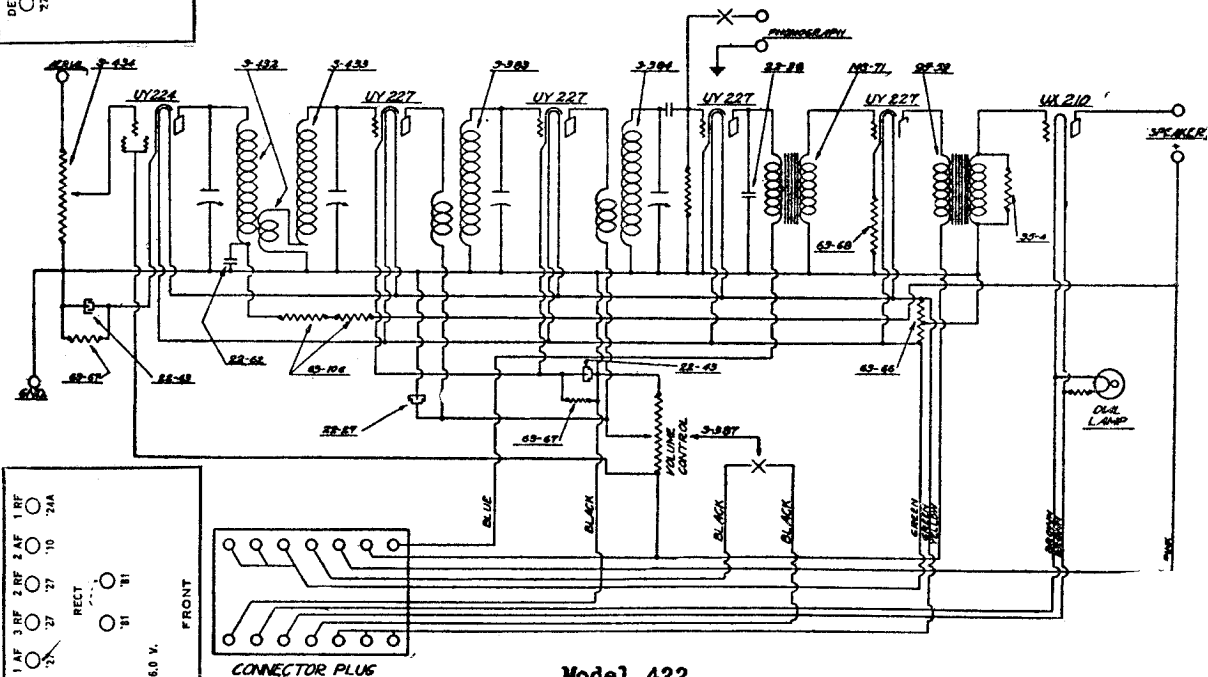
Model 41,42



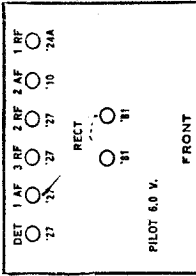
Model 41 (1929)



Model 422



Model 42 (1929)



ZENITH—MODEL 42

Type Tube	Position of Tube	"A" Vts.	"B" Vts.	"C" Vts.	Plate MA.	Screen Grid	Cath. Volts
'24	1 R. F.	1.90	214	3	3.4	94	+2.2
'27	2 R. F.	1.90	80	4	3.5		+4
'27	3 R. F.	1.90	85	4	3.5		+4
'27	Det.	1.90	35		2.2		
'27	1 Aud.	1.90	78	4	2.5		+4
'10	2 Aud.	6.9	420	31	20		
'81	Rect.	6.9			45		
'81					45		

LV—115. Volume Control Max.

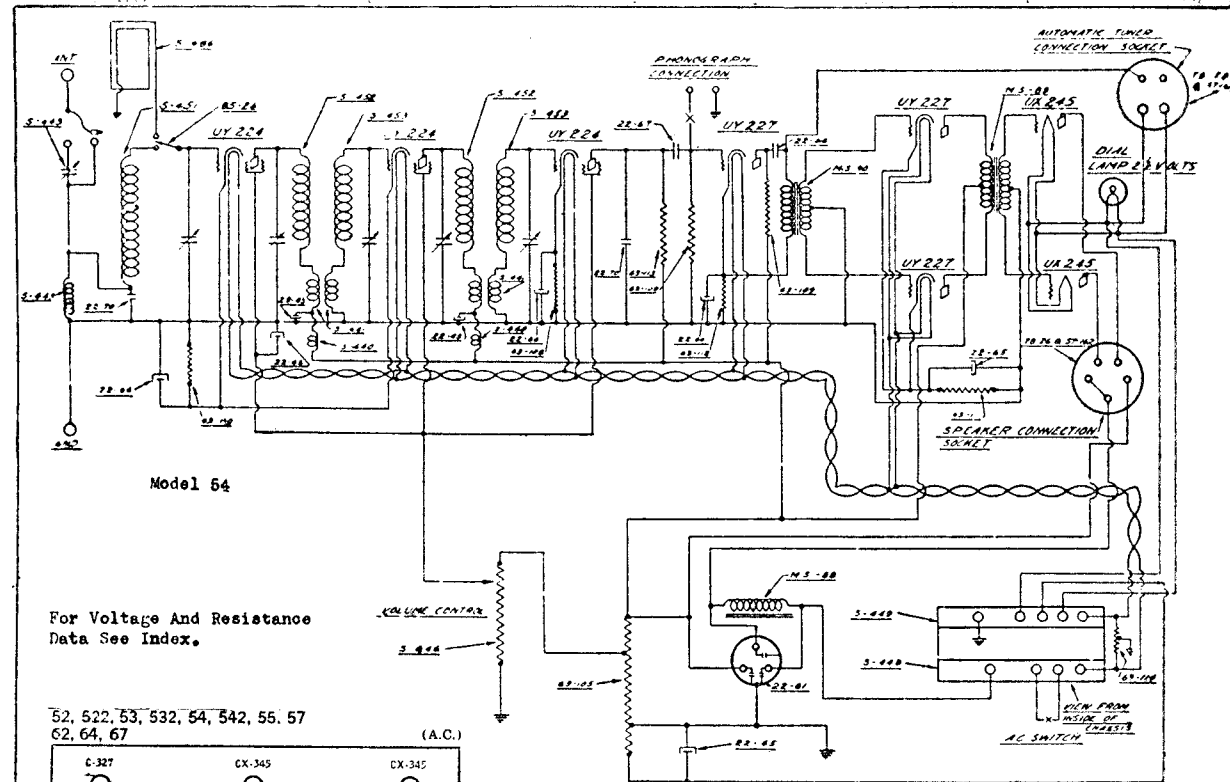
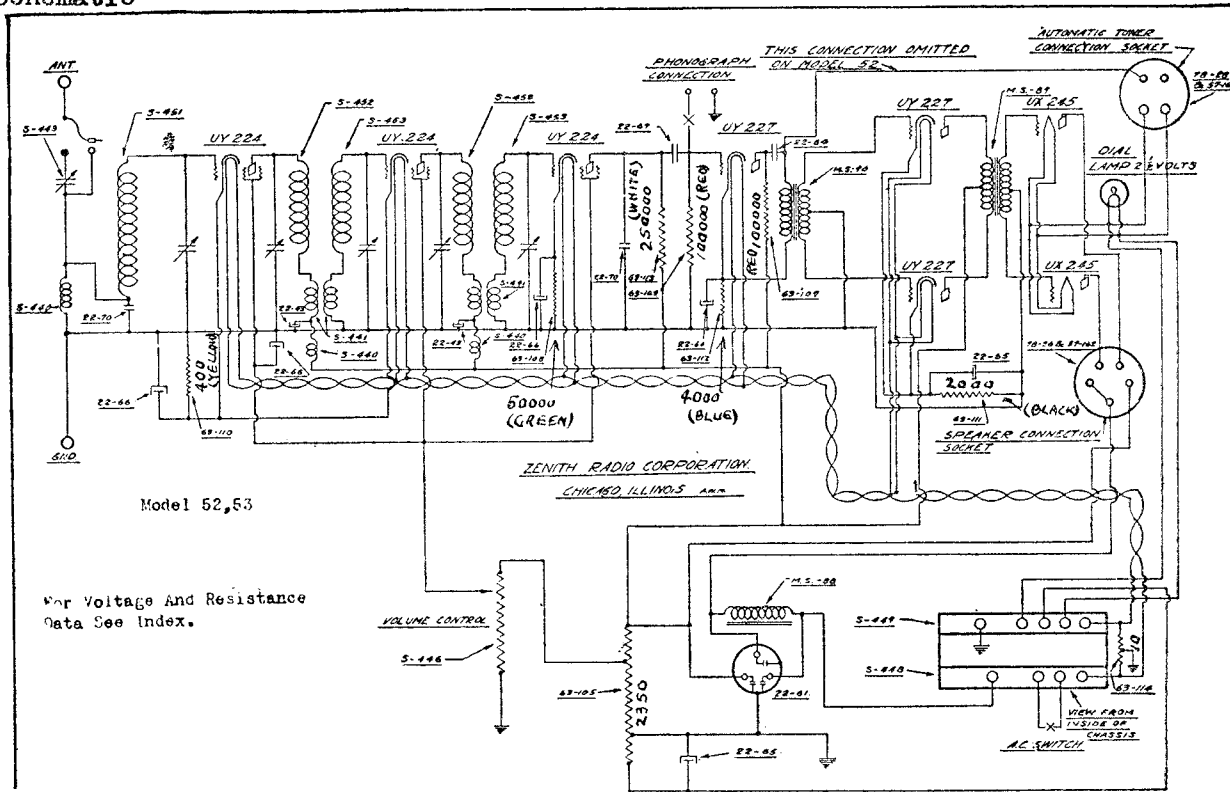
ZENITH—MODEL 41

Type Tube	Position of Tube	"A" Vts.	"B" Vts.	"C" Vts.	Plate MA.	Screen Grid	Cath. Volts
'24	1 R. F.	1.95	200	2	3	98	+2
'27	2 R. F.	2	95	4.5	4		+4.5
'27	3 R. F.	2	95	4.5	4		+4.5
'27	Det.	1.95	38		2.1		
'27	1 Aud.	2	89	4.5	3		+4.5
'71A	2 Aud.	4.2	145	29	14.5		
'80	Rect.	4.1			17.8		

LV—110. Volume Control Max.

MODEL 52,53
MODEL 54
Schematic

ZENITH RADIO CORP.



52, 522, 53, 532, 54, 542, 55, 57
62, 64, 67

(A.C.)

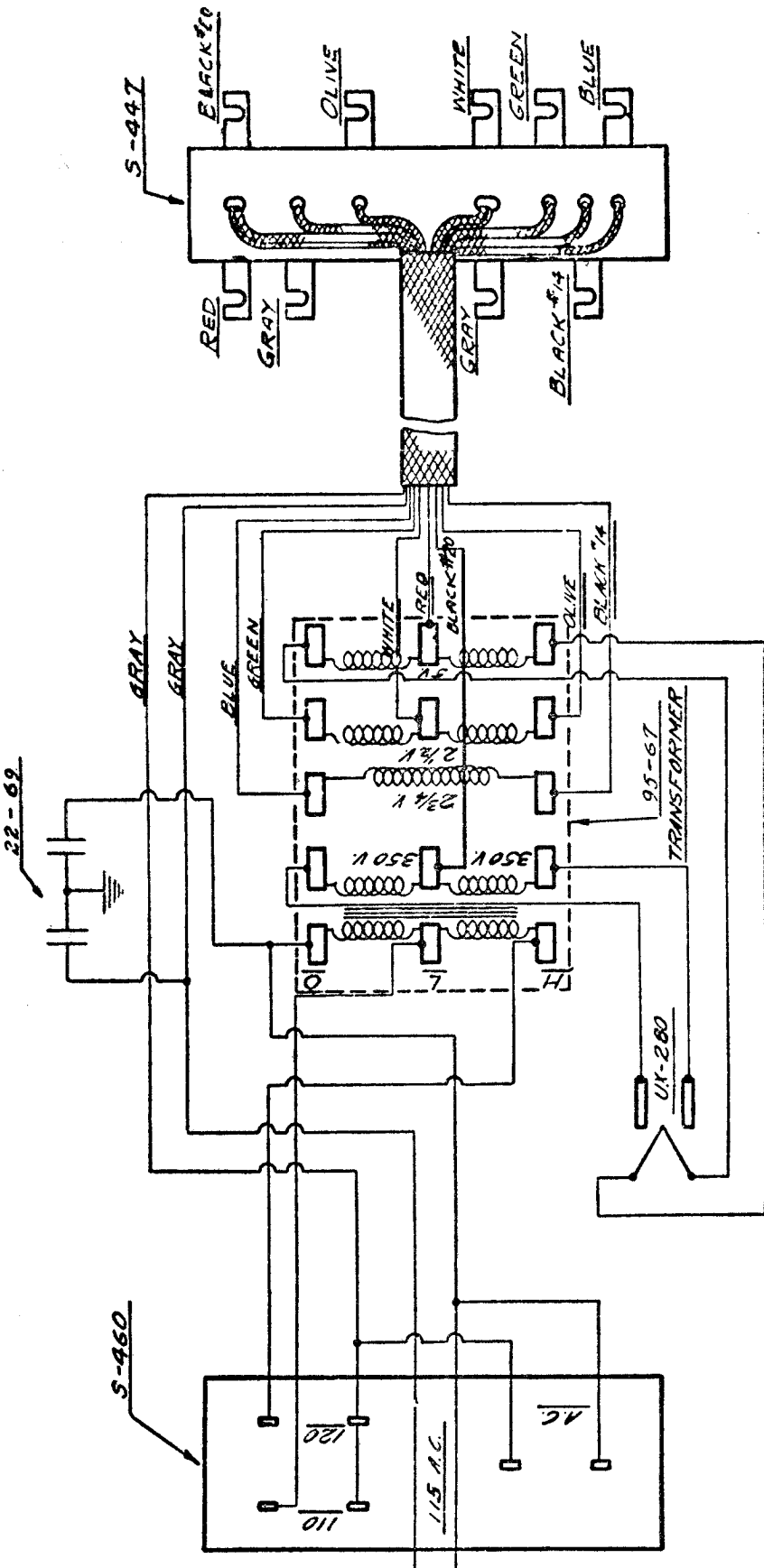
C-327 1st A.F.	CX-345 3rd A.F.	CX-345 3rd A.F.
C-324 Det	C-327 2nd A.F.	C-324 2nd R.F.
C-327 2nd A.F.	C-324 2nd R.F.	C-327 2nd A.F.
C-324 1st R.F.		

2 CX-381's in separate power unit

ZENITH RADIO CORPORATION
CHICAGO, ILLINOIS
MODEL 54

ZENITH RADIO CORP.

MODEL 52,53,54,55
Voltage - Resistors
MODEL ZE-50
Power Unit



ZENITH—Models 52-53-54-55
Line Voltage 115—Set on 120 Volt Tap—Volume Control Position Full On
*The screen grid voltage on the detector tube is actually 50 volts but an electrostatic voltmeter would be needed to show true voltage.

Color Code of Resistors in 50 Series

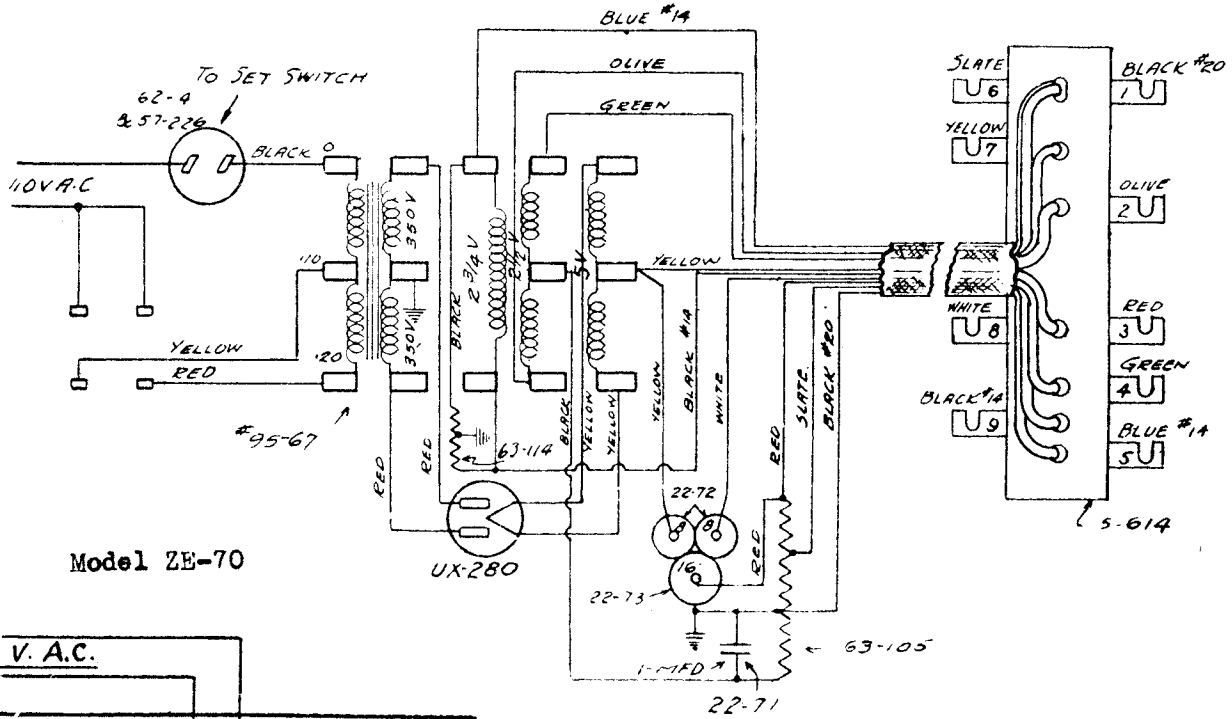
63-101	50000 ohms	Green
63-109	100000 ohms	Red
63-110	400 ohms	Yellow
63-111	2000 ohms	Black
63-112	4000 ohms	Blue
63-113	250000 ohms	White
63-121	100000 ohms	Pink

The voltage divider 63-105 has a total resistance of 6000 ohms tapped at 850 ohms from one end and 2800 ohms from the other end. The remaining section has a resistance of 2350 ohms. Mershon filter units are used.

TUBE NO. ORDER	TYPE OF TUBE	POSITION	TUBE OUT				TUBE IN TESTER				
			VOLTS	RES.	WV	RES.	CATHODE VOLTS	NORMAL VOLTS	PLATE VOLTS	SCREEN VOLTS	
224	1st 5Y	1st RF	2.4	175	1	2	1.6	2.8	50	-	-
224	1st 5Y	2nd RF	2.4	175	1	2	1.6	2.8	50	-	-
224	1st 5Y	Det.	2.4	90	5	2	1.2	4	-	-	
227	1st 6Z	AF	2.4	55	2	2	1.2	-	-	-	
227	2nd 6Z	AF	2.4	143	14	14	4.3	5.7	-	-	
245	3rd 6Z	AF	2.4	143	14	14	4.3	5.7	-	-	
245	3rd 6Z	AF	2.2	285	45	-	24	28	-	-	
245	3rd 6Z	AF	2.2	245	45	-	24	28	-	-	
250	3rd 6Z	AF	4.7	-	-	-	100	-	-	-	

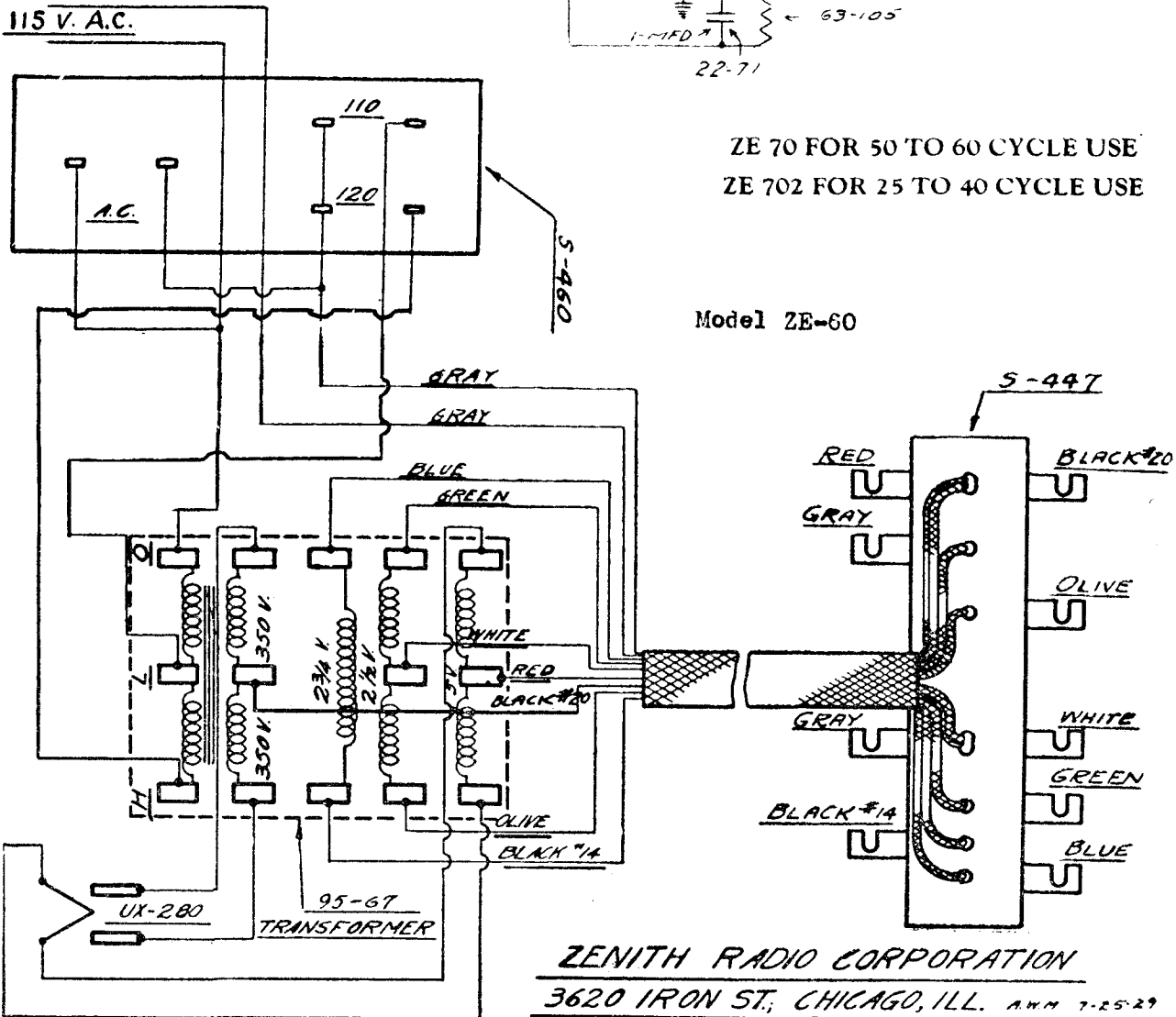
ZENITH RADIO CORP.

MODEL ZE-60
MODEL ZE-70



ZE 70 FOR 50 TO 60 CYCLE USE
ZE 702 FOR 25 TO 40 CYCLE USE

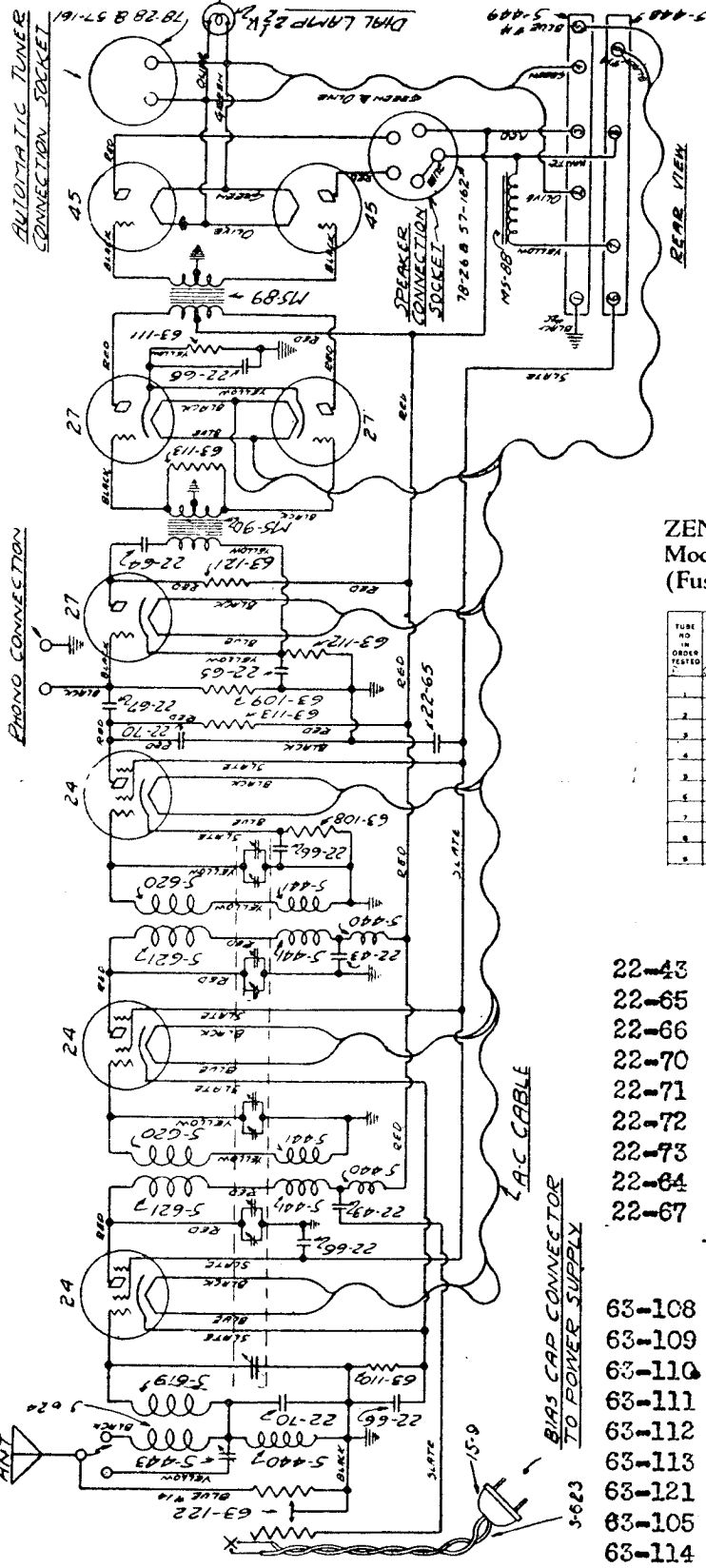
Model ZE-60



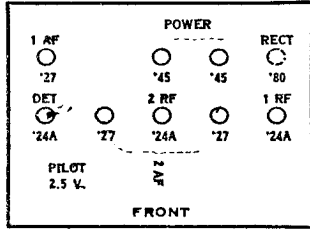
MODEL 71, 72, 73, 77, 712,
722, 732, 777

ZENITH RADIO CORP.

Schematic - Voltage
Electrical Values



Models 50, 60, 70 Series (1930)



For wiring diagram of
the power pack ZE-70
and ZE-702 for series
70 receivers see
Index

ZENITH—Models 71, 72, 73 and 77—60 Cycle
Models 712, 722, 732 and 777—25 Cycle
(Fuse in 110 Volt Clips—Line Volts 110)

TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES						MILLIAMPERES		
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID - SPACE (0-60 P)	NORMAL GRID - SCREEN (0-50 P)	CATHODE TO HEATER	SCREEN GRID TO PLATE	PLATE TO PLATE	TUBE TEST	PLATE CURRENT (5 CHARGE)
1	224	1 R.F.	2.5	185	2	55	2.5	-	2.5		
2	224	2 R.F.	2.5	185	2	55	2.5	-	3.0		
3	224	Det.	2.5	100	-	5	5	-	.1		
4	227	1 A.P.C.	2.5	65	-	25	5	-	1.5		
5	227	PP-2nd	2.5	160	-	13	13	-	3.4		
6	227	PP-2nd	2.5	160	-	13	13	-	3.4		
7	245	PP-PWR	2.3	260	-	52	-	-	3A		
8	245	PP-PWR	2.3	260	-	52	-	-	3A		
9	280	Rect.	5.0	-	-	-	-	-	-		

CONDENSER SPECIFICATIONS

- 22-43 .25 mf (2)
- 22-65 1. (double)
- 22-66 .2 (quadruple)
- 22-70 .001 (2)
- 22-71 1.
- 22-72 8. (2)
- 22-73 16.
- 22-64 .03
- 22-67 .15

RESISTOR SPECIFICATIONS

- 63-108 50000 ohms Green
- 63-109 100000 ohms Red
- 63-110 400 ohms Yellow
- 63-111 2000 ohms Black
- 63-112 4000 ohms Blue
- 63-113 250000 ohms White
- 63-121 100000 ohms Pink
- 63-105 voltage divider
- 63-114 10 ohms Center Tap

INSTALLATION OF TONE CONTROL ON MODEL 70 SERIES

Remove variable condenser shield. Unsolder lead from lower terminal on rocking stator and pull this lead through the base to under side of chassis.

Turn chassis up side down; remove the two machine screws from rear side of coil assembly base on the first R. F. coil can only

With chassis inverted, multicoord terminal strip facing the operator, remove the one machine screw from right hand end of chassis which is screwed through the chassis frame and into the R. F. coil assembly base.

Unsolder the two remaining leads, coming from the first R. F. coil can; the one at the antenna choke terminal; the other at the S. A. tip jack; also the copper shielding on lead going through 1st R. F. coil can.

The R. F. coil assembly base may now be forced back about one-half inch and this will permit the 1st R. F. coil can and its base to be lifted upward from the chassis.

Measure off a point midway between the volume control shaft and the rocking stator shaft centers; and 15/16" from chassis bottom (base plate removed.)

Center punch and drill a .378" dia. hole to take the 500,000 ohm variable resistor tone control shaft, and mount so soldering terminals on same point toward, and are next to the volume control.

Be sure the Textolite Insulating Strip is attached to the back of the tone control unit to prevent the terminals from shorting out when the R. F. coil can is again installed.

Mount the .01 mfd. fixed condenser by soldering one of its terminals directly to one of the outside terminals of the six point audio transformer; be sure to get the secondary side, or grid of the 245 output tube.

This condenser will be self-supporting.

Wire from the remaining .01 fixed condenser terminal to any one of the two terminals on the variable resistance tone control unit

Wire from the remaining terminal on this unit to the other side of the same secondary winding direct on six point audio transformer, or grid of the other 245 output tube.

Technically speaking this produces a series circuit consisting of a .01 mfd. fixed condenser and a 500,000 ohm variable resistor in shunt to the secondary circuit of the six point audio transformer, or from grid to grid of the 245 output tubes.

Run your two twisted leads through the slot in the R. F. coil assembly base, behind and to the right of the 1st R.F. socket (still viewing the chassis as before - inverted.)

Press the Textolite Insulating Strip on the back of the tone control unit into place and inspect to see that no terminals are shorted.

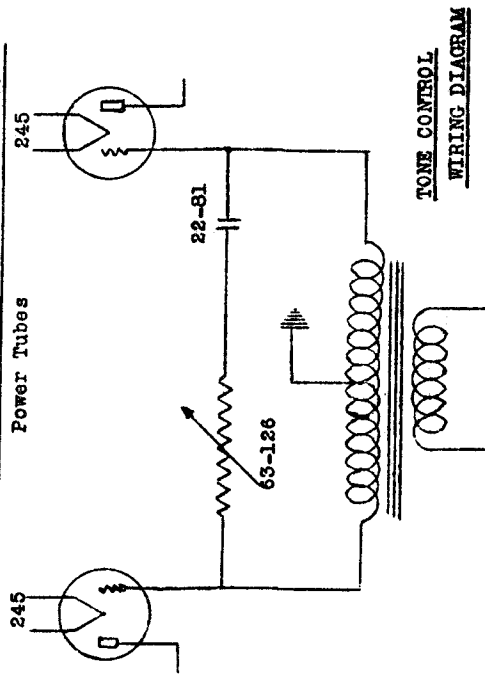
Replace the 1st R.F. coil can and base by first threading through the leads in the assembly base and work the coil can base in to place.

Insert the two screws you removed from this point on the base Force the coil assembly base back into position, and insert the machine screw into same through chassis end.

Resolder all leads previously removed and put condenser shield in place. Be sure to resolder the copper shielding on the lead from 1st R.F. coil can previously unsoldered.

Turning tone control knob clockwise produces the treble effect and counter-clockwise the bass.

A small tone control escutcheon plate will be included and should be mounted on the cabinet panel to read correctly, the cabinet panel having been drilled with a 5/8" hole 1 1/16" from base centrally located between the resonance and volume controls.

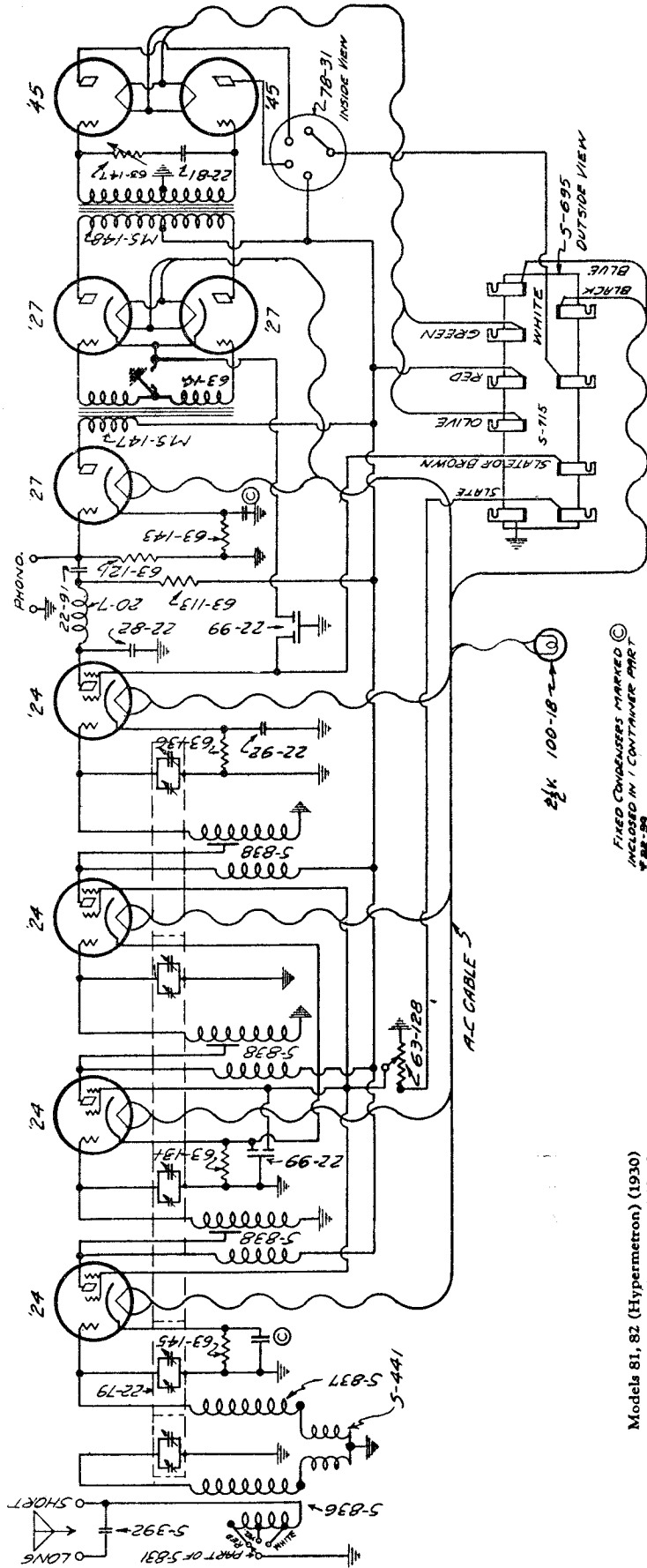


ZENITH RADIO CORP.

**MODEL 70
Tone Control
Installation**

MODEL 80 Hypermetron Schematic

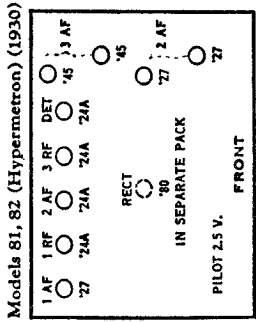
ZENITH RADIO CORP.



SIZE	COLOR	USED FOR
# 20	RED	+180. R.F. & I.F. PLATE LEAD.
# 20	WHITE	+250 FILTER CHOKE.
# 20	YELLOW	AUDIO CATHODES.
# 20	SLATE	SCREENS & CATHODES R.F.
# 20	BLACK	AUDIO GRID LEADS, GRD COMMON.
# 20	GREEN & OLIVE	POWER FILAS. & PILOT LIGHT.
# 14	BLACK	224 & 227 FILAMENTS.
# 14	BLUE	" " " "
# 20	BROWN OR SLATE	224 DET. SCREEN.

FIXED CONDENSERS MARKED ©
INCLUDED IN 1 CONTAINER MFR.
88-89

ZENITH RADIO CORP.
CHICAGO, ILL.
MODEL 80 HMB TRM
HYPERMETRON



MODELS 82, 89 (60 cycle) and 822, 892 (25 cycle) ZENITH HYPERMETRON RECEIVERS. Models 82 and 89 Zenith Receivers operate on 105 to 125 volts, 50 to 60 cycle alternating current. Models 822 and 892 operate on 105 to 125 volts, 25 to 40 cycle alternating current (A. C.) The power supply ZF80 is used on 50 to 60 cycle current. The power supply ZF802 is used on 25 to 40 cycle current

MODEL 80 Hypermetron
Parts List

ZENITH RADIO CORP.

HYPERMETRON

Variable Condenser Assembly

22-79	Five Gang Variable Condenser.....	20.00
S-829	Dial Drum Assembly.....	1.50
26-21	Calibrated Dial Strip.....	.20
S-703	Dial Lamp Bracket.....	.45
100-18	2½ Volt Dial Lamp.....	.25
11-2	Dial Control Cable.....	.05
80-70	Dial Control Cable Tension Spring.....	.01

Fixed Condensers

22-81	Single .01 mf Condenser.....(Tone Control Cond.)	.85
22-82	Single .001 " ".....(Detector Plate)....	.30
22-91	Single .03 " ".....(Audio Coupling)....	.50
22-92	Single .5 " ".....(Det. Cathode Bypass)	.75
22-99	Dual .1 " ".....(2nd RF & Det. Bypass)	.75
S-392	Antenna Series Condenser.....	.10

Resistors

63-113	250M Ohm Resistor.....(Red, Green End, Yellow Dot) ..	.35
63-121	100M " ".....(Pink).....	.35
63-131	400 " ".....(Yellow, Black End, Brown Dot)	.35
63-136	50M " ".....(Green, Black End, Orange Do)	.35
63-143	4M " ".....(Yellow, Black End, Red Dot)	.35
63-145	800 " ".....(Gray, Black End, Brown Dot)	.35
63-146	2000 " ".....(Red, Black End, Red Dot)...	.35

R.F. Coils

S-441	R. F. Coupling Coil.....	1.00
S-836	Preselector Coil.....(Coil Only)....	1.40
S-837	1st R. F. Coil.....(" ").....	1.00
S-838	2nd, 3rd R. F. & Det. Coils.....(" ").....	1.00
20-7	Detector Choke.....	.50
20-8	R. F. Choke.....	.50

Shields & Bases

4-87	Tube Shield Can Base.....	.05
126-62	Coil " " ".....	.05
126-59	R. F. Coil Shield Can.....	.25
126-61	Tube Shield Can.....	.20
MS-153	Variable Condenser Shield.....	.75

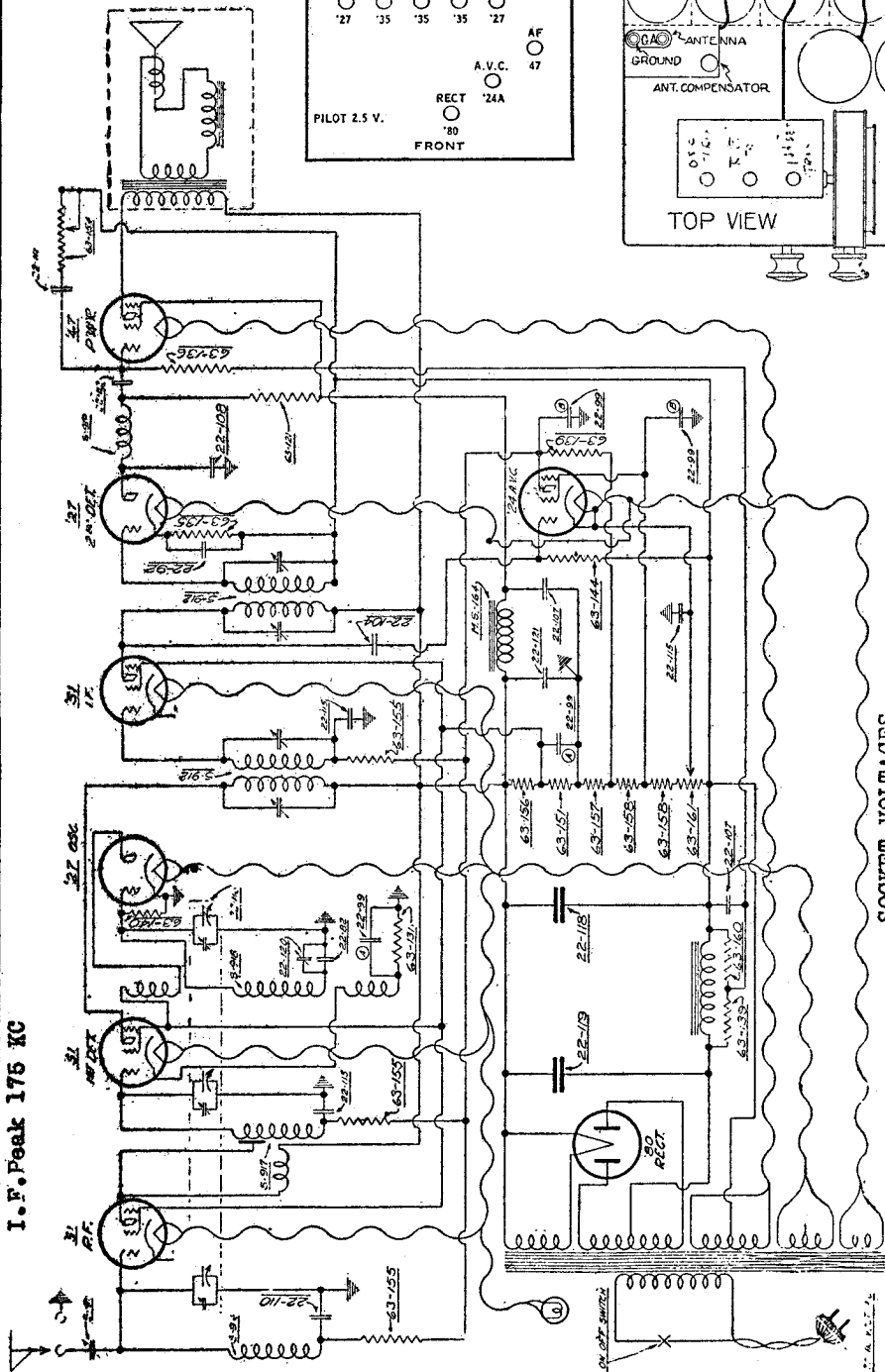
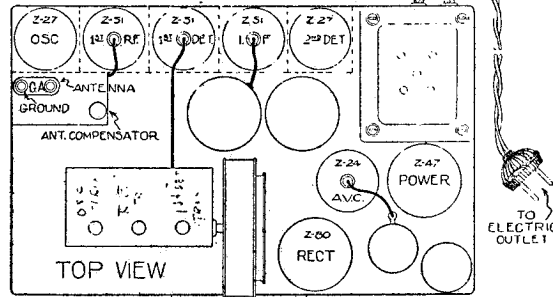
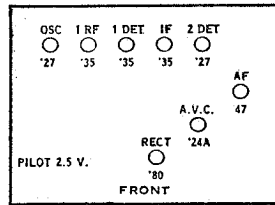
Miscellaneous

44-4	Phono Connector Base.....	.30
78-30	Five Prong Floating Socket.....	.20
78-31	Five Prong Stationary Socket.....	.20
78-32	Four Prong Stationary Socket.....	.20
57-161	UY Socket Guide Plate.....	.01
57-242	Four & Five Prong Socket Guide Plates.....	.03
63-128	Volume Control.....	1.50
63-147	Tone Control.....	1.25
85-26	Three Point Switch Base Less Shaft.....	.45
143-9	Three Point Switch Bushing with Contact Arm.....	.35
117-31	Three Point Switch Lever Arm.....	.01
S-695	Multicord & Terminal Plate Assembly.....	2.00
S-715	Multicord Terminal Plate Only.....	.50
52-23	Multicord only.....	1.25
MS-147	1st Stage Push Pull Transformer...(5 Lead).....	5.50
MS-148	2nd Stage Push Pull Transformer...(6 Lead).....	5.50

ZENITH RADIO CORP.

MODEL AH, CH, RH
Schematic
Voltage - Chassis

Models AH, CH, RH, 90 (1932)



SOCKET VOLTAGES

Type	Position	Fil. Volts	Plate Volts	Control Grid Volts	Cathode Volts	Plate M. A.	S.G. Volts
Z51	R. F.	2.25	170	-4	0	4.5	64
Z51	1st Det.	2.25	165	-1.5	1.5	3.	62
Z27	Osc.	2.1	55	0	0	4.5	0
Z51	I. F.	2.3	180	-5.6	0	.75	80
Z27	2nd Det.	2.15	160	-14.5	8.5	80	0
Z47	Power	2.3	250	-15	0	28.	250
Z24	A. V. C.	2.1	8	-5	0	0	40
Z80	Rect.	4.7	0	0	0	34. ca.	0

Voltage readings taken with a Weston type 566 tester. Manual volume control in maximum position and antenna and ground disconnected. Line voltage 112.

MODELS AH, CH, RH
Parts List
Servicing Data

ZENITH RADIO CORP.

I-F. ADJUSTMENT

The intermediate transformers employed between the 1st detector and I. F. tube and between the I. F. tube and 2nd detector have been accurately peaked to 175 kilocycles on a temperature controlled crystal oscillator before leaving the factory and unless the service man has an oscillator which is accurately calibrated at 175 kilocycles and feels that the intermediates are at fault, their adjustment should never be changed. However, in cases where it is necessary the test oscillator is first set to 175 kilocycles and coupled to the grid terminal of the first detector through a .00025 mf. fixed series condenser. The ground lead of the test oscillator is connected to the ground post of the receiver. (Indicated at point "A" in figure 2.) For this operation the oscillator tube of the receiver should be removed. Do not connect the test oscillator direct to grid of the first detector tube without the series condenser being in the grid lead, since by so doing, the bias resistor will be shorted out. Four adjusting screws are provided under the chassis (see figure 3). These verniers tune the plate circuit of the first detector, grid and plate circuits of the I. F. stage and grid circuit of the 2nd detector. (See wiring diagram.) Beginning at the second detector grid vernier, each adjusting screw is, in turn, set for maximum output. For best results the verniers should be gone over twice in the same rotation, always keeping the output from the test oscillator at the weakest possible strength.

BALANCING CHASSIS

Every Zenette Superheterodyne is carefully balanced on laboratory equipment before the set leaves the factory and should not require further attention. However, in the event that some part of the receiver has been changed or the adjustments shifted by mishandling it may be done as follows: Procure an oscillator which is calibrated to 1500 and 550 kilocycles. It is necessary that it be accurate, otherwise the receiver dial cannot be set properly. It will be best to remove the chassis from the cabinet for this operation in order to reach the oscillator padding condenser adjustment. (See figure 4.) The test oscillator should be coupled to the antenna and ground posts of the receiver by the two leads now being furnished by the manufacturers of commercial oscillators. Although very good results may be had simply by judging audibility from the speaker, a more accurate method is to employ an output meter attached to the speaker transformer.

Before balancing any Zenette Superheterodyne the tuning condenser gang should be turned to maximum mesh position, namely the 550 kilocycle end of the scale. When the condenser is turned as far as it will go in this direction the dial index light must point to a position one division or channel beyond the 550 kilocycle line on the dial. If this condition does not already exist the index bracket should be adjusted up or down as the case may be.

The test oscillator should first be set to exactly 1500 kilocycles and attached to the antenna and ground posts, after which the receiver dial is also set to the 1500 kilocycle marking. With the manual volume control set to maximum volume, the oscillator trimmer (see figure 3) is adjusted to give maximum response in the speaker or greatest deflection of the output meter, if one is used. This vernier is extremely sharp and, therefore, great care should be used in its adjustment. The first detector section is next (see figure 3). This is the right hand section from the front. Its trimmer must also be varied for maximum response.

It will be noted that the center section of the condenser gang does not have a vernier adjustment. This is provided by the antenna compensating condenser. This section will automatically resonate by adjusting the antenna compensator after the set is connected to the aerial which is to be permanently employed. It is done by tuning to a very weak station at between 1500 and 1300 kilocycles on the dial and turning the manual volume control to the position of maximum volume. The compensator knob varies the capacity of a small series condenser and should be turned for greatest signal strength by turning first to the right and then to the left and allowed to stay at a point of maximum volume.

After making the above adjustment at 1500 kilocycles it will be necessary to then set the test oscillator at 550 kilocycles. Tune the set to 550 kilocycles and rock the receiver dial back and forth over the test oscillator signal at the same time adjusting the oscillator padder condenser (see figure 4). An adjustment of the padder will be found which gives maximum output. When this has been done it is necessary to go back to 1500 kilocycles on both the test oscillator and the dial and readjust the oscillator vernier if necessary.

In case a test oscillator is not available the service man may use a weak station on the low frequency end and another station on the high frequency end with the manual volume control in the maximum position.

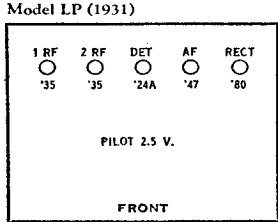
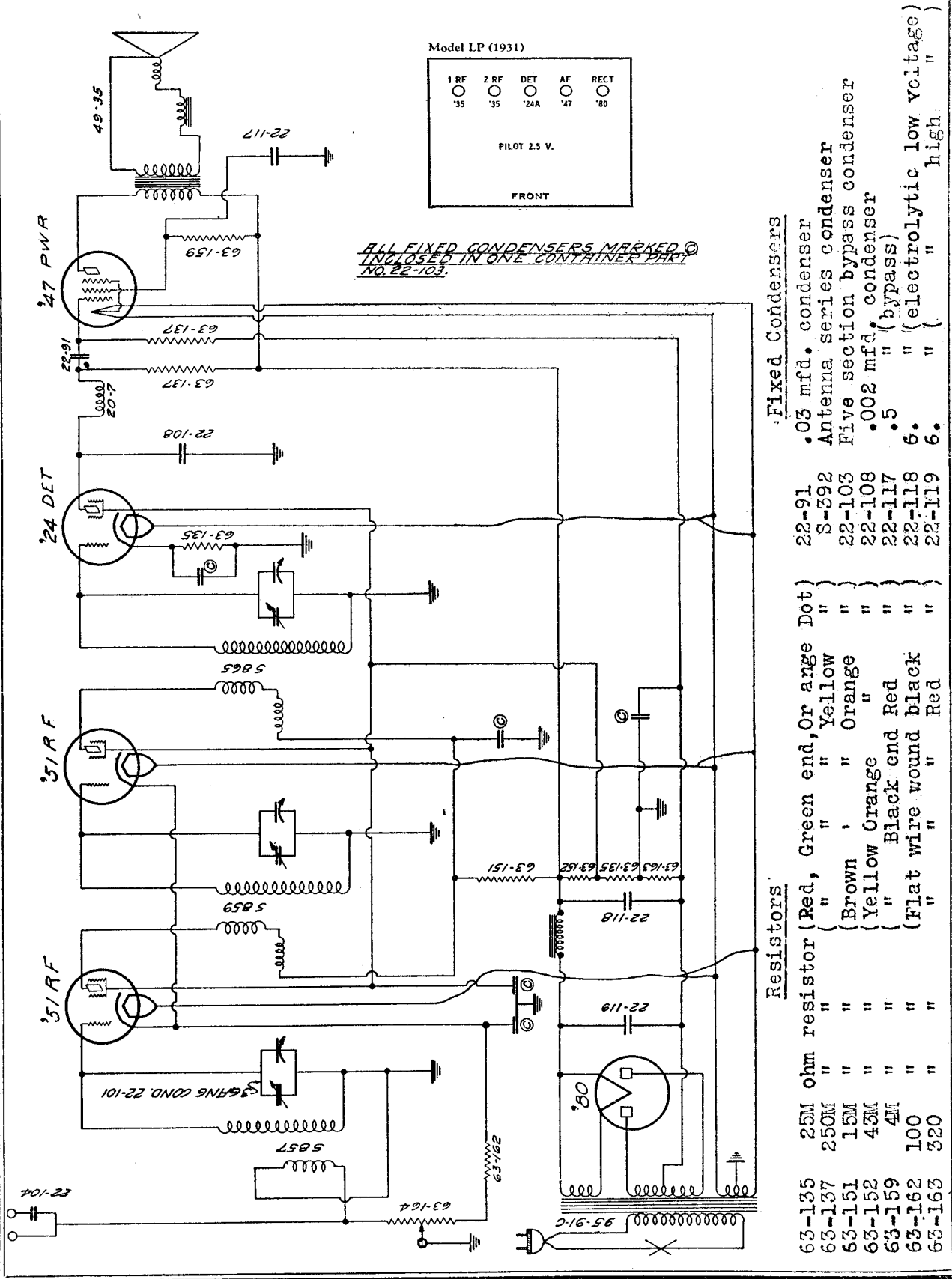
RESISTORS

No.	PART	DESCRIPTION	No.	PART
63-121	100M ohm	Detector Plate.....	22-82	.001 mf
63-131	400 ohm	1st Det. Cathode.....	22-92	.5 mf
63-135	25M ohm	Power Tube Grid.....	22-99	.1 mf (Dual)
63-136	50M ohm	A. V. C. Plate.....	22-104	.0001 mf
63-139	500M ohm	Osc. Grid.....	22-107	.5 mf
63-140	1 meg.	A. V. C. Grid.....	22-108	.001 mf
63-144	3 meg.	Voltage Divider.....	22-110	.1 mf
63-151	15M ohm	1st Det. I. F.....	22-111	.03 mf
63-155	1M ohm	Voltage Divider.....	22-112	.1 mf
63-156	10M ohm	Voltage Divider.....	22-115	1 mf
63-157	100 ohm	Voltage Divider.....	22-118	6. mf Electrolytic..L.V.
63-158	1700 ohm	Voltage Divider.....	22-119	6. mf Electrolytic..H.V.
63-160	100M ohm	Power Tube Bias.....	22-121	8. mf

CONDENSERS

ZENITH RADIO CORP.

MODEL LP
Schematic
Parts List



ALL FIXED CONDENSERS MARKED ©
INCLUDED IN ONE CONTAINER PART
NO. 22-103.

Fixed Condensers

22-91	.03 mfd. condenser
S-392	Antenna series condenser
22-103	Five section bypass condenser
22-108	.002 mfd. condenser
22-117	.5 " " (bypass)
22-118	6. " " (electrolytic low voltage)
22-119	6. " " high

Resistors

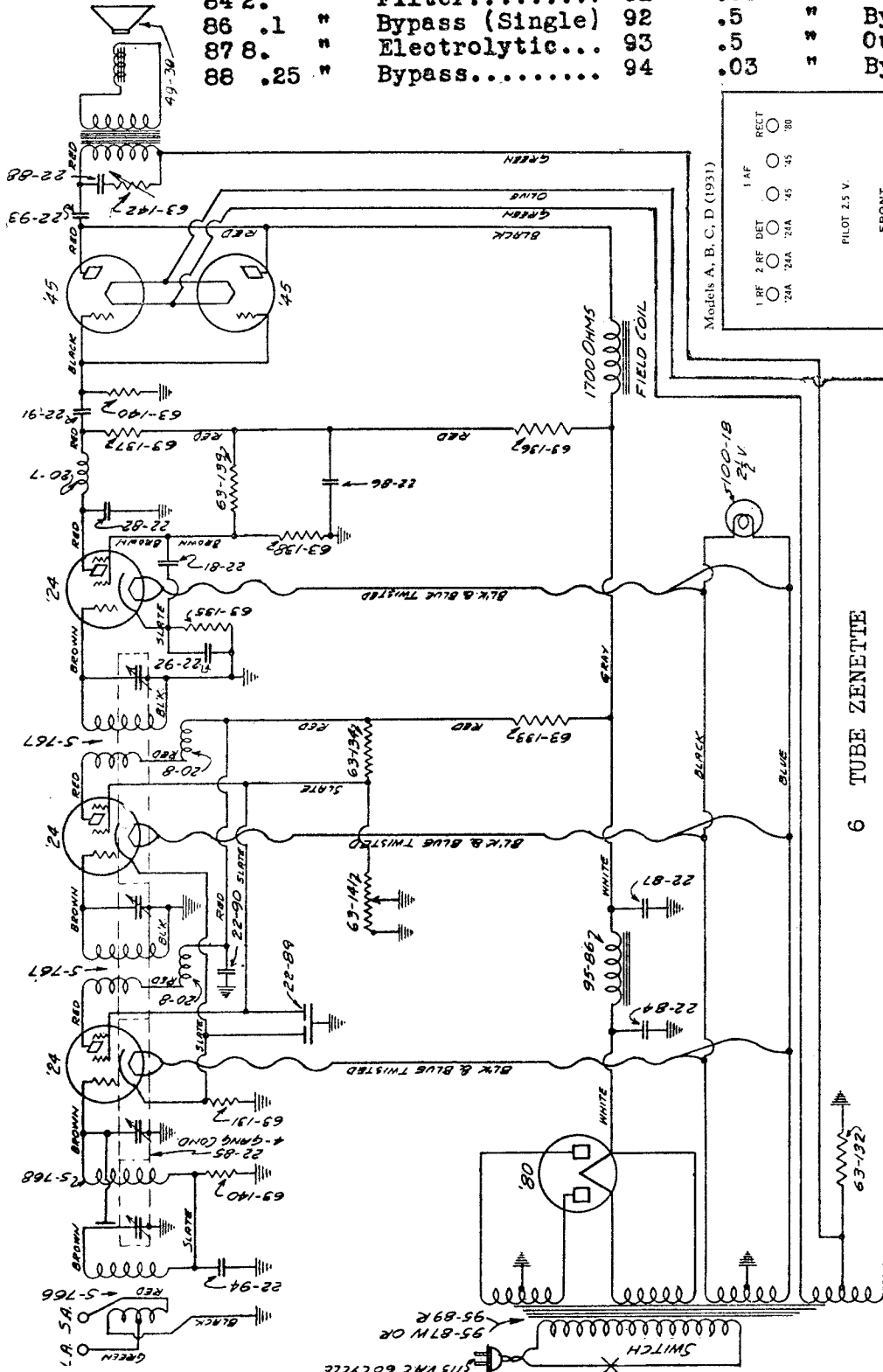
63-135	25m ohm resistor (Red, Green end, Or ange Dot)
63-137	" " " " Yellow " "
63-151	" " " " Brown " " Orange
63-152	" " " " Yellow Orange " "
63-159	" " " " Black end Red
63-162	" " " " (Flat wire wound black
63-163	" " " " Red

MODEL 6 Tube Zenette
Chassis A,B,C,D (2004)
Schematic, Parts List

ZENITH RADIO CORP.

CONDENSERS

22-81	.01 mf	Bypass.....	89	.1	**	Bypass (Double)
82	.001 "	"	90	.1	**	Bypass (Single)
84	2.	Filter.....	91	.03	**	Audio Coupling.
86	.1	Bypass (Single)	92	.5	**	Bypass.....
87	8.	Electrolytic...	93	.5	**	Output.....
88	.25 "	Bypass.....	94	.03	**	Bypass.....

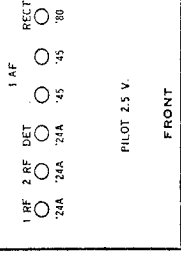


6 TUBE ZENETTE

RESISTORS

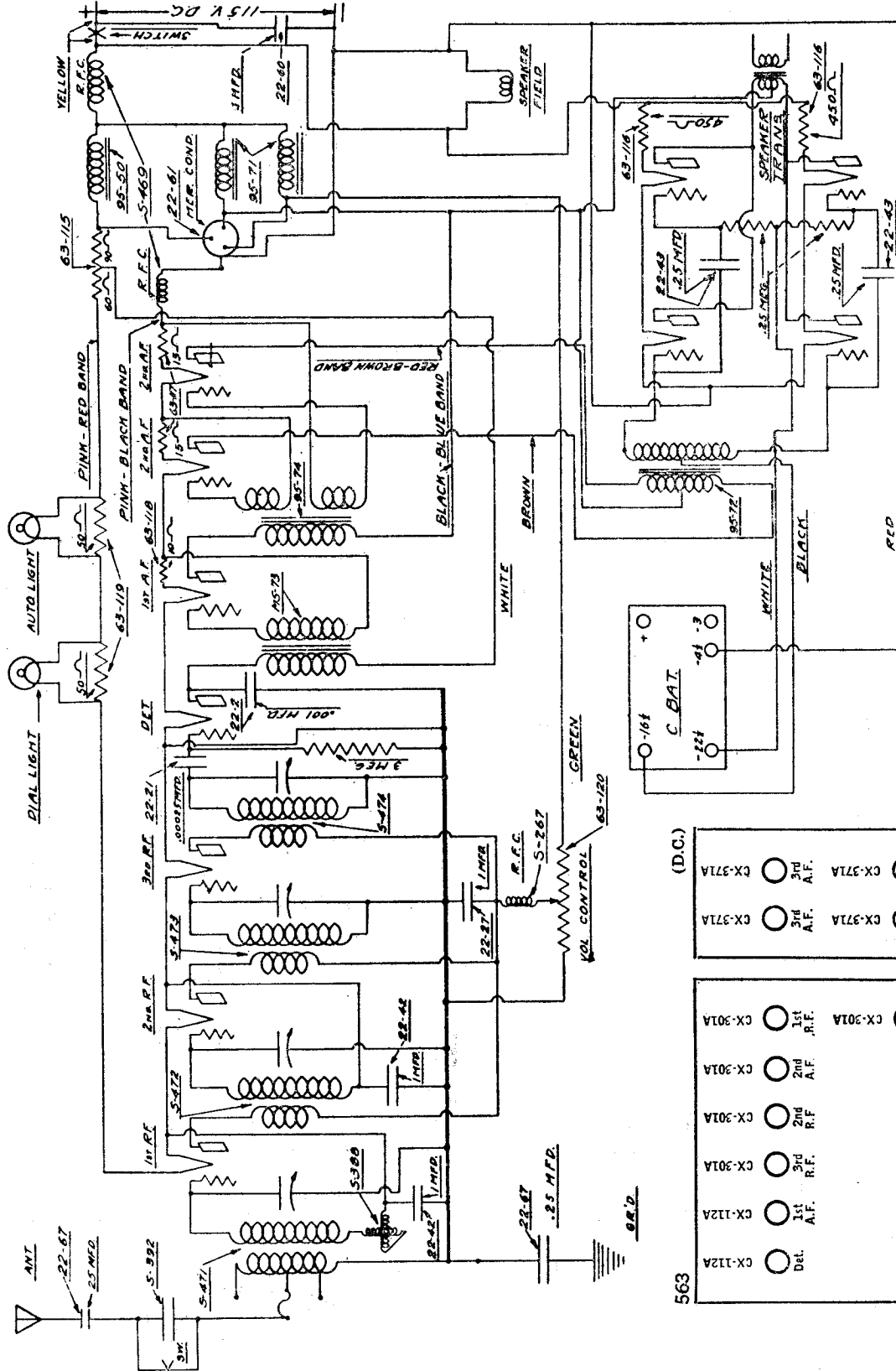
63-131	400 ohm	(Yellow Brown Dot).....	137	250M	(Red Yellow Dot).....
132	900 "	(White " ").....	138	350M	(Orange Yellow ").....
133	25M "	(Red Orange ")Large	139	500M	(Green Yellow ").....
134	35M "	(Orange).....	140	1 Meg	(Brown).....
135	25M "	(Red Orange Dot)Small	141	50M	Volume Control.....
136	50M "	(Green).....	142	50M	Tone Control.....

Models A, B, C, D (1931)



MODEL 563 DC
Schematic

ZENITH RADIO CORP.



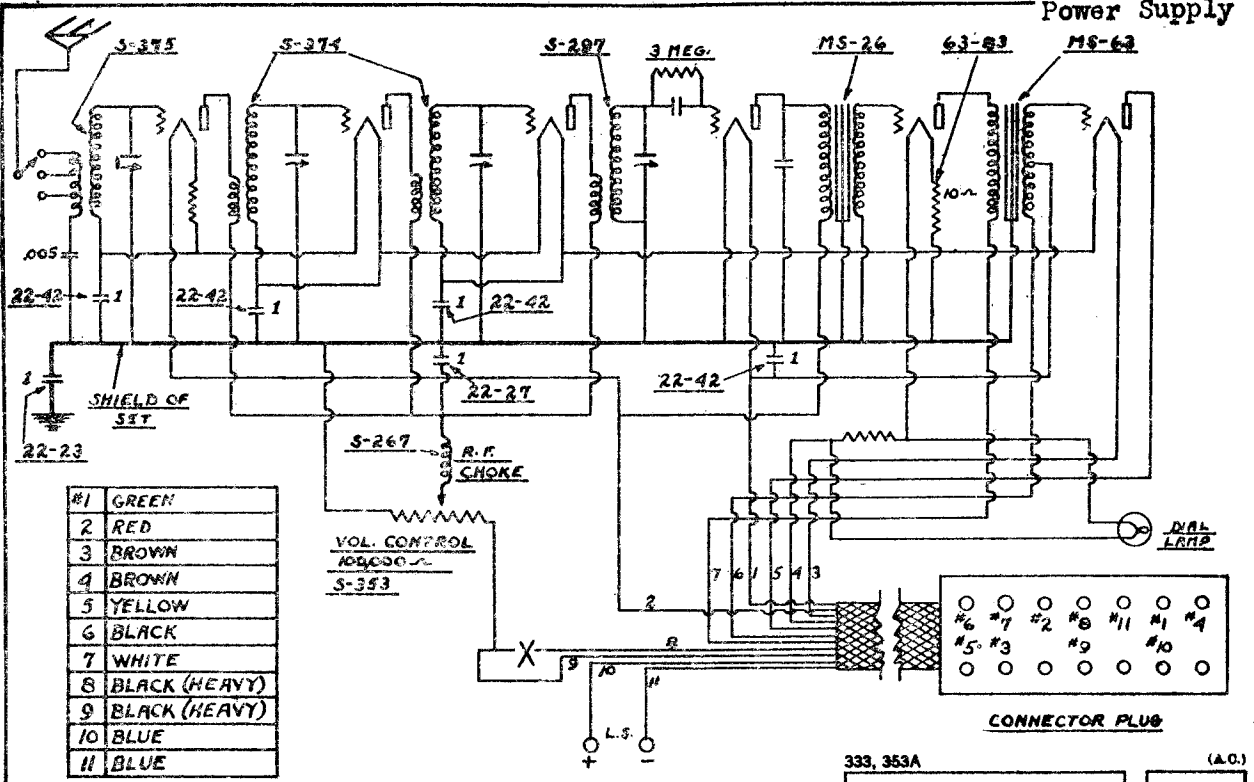
(D.C.)	
◯ CX-371A	◯ CX-371A
◯ CX-371A	◯ CX-371A

563

◯ CX-301A	◯ CX-301A
◯ CX-301A	◯ CX-301A
◯ CX-301A	◯ CX-301A
◯ CX-301A	◯ CX-301A
◯ CX-112A	◯ CX-112A
◯ CX-112A	◯ CX-112A

ZENITH RADIO CORP.

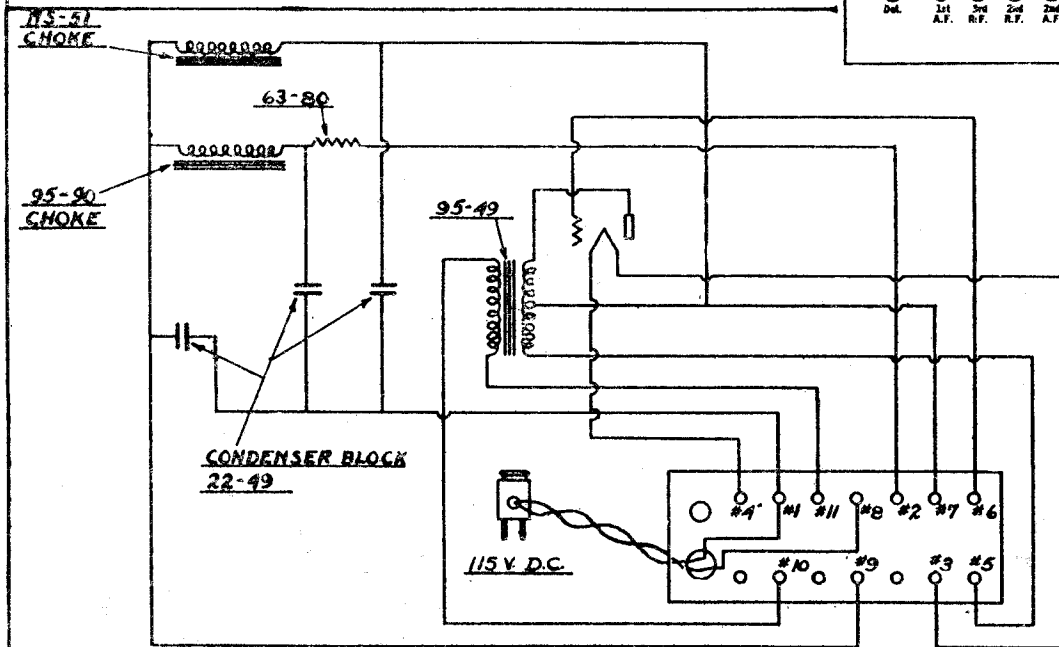
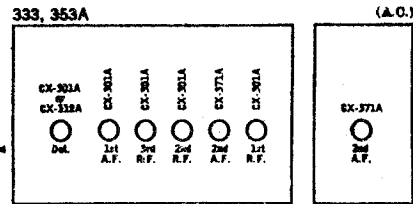
MODEL 333-353A
Schematic
MODEL ZE-17
Power Supply



#1	GREEN
2	RED
3	BROWN
4	BROWN
5	YELLOW
6	BLACK
7	WHITE
8	BLACK (HEAVY)
9	BLACK (HEAVY)
10	BLUE
11	BLUE

13.

WIRING DIAGRAM
MODEL 333-353A
6 TUBE D.C. SET.

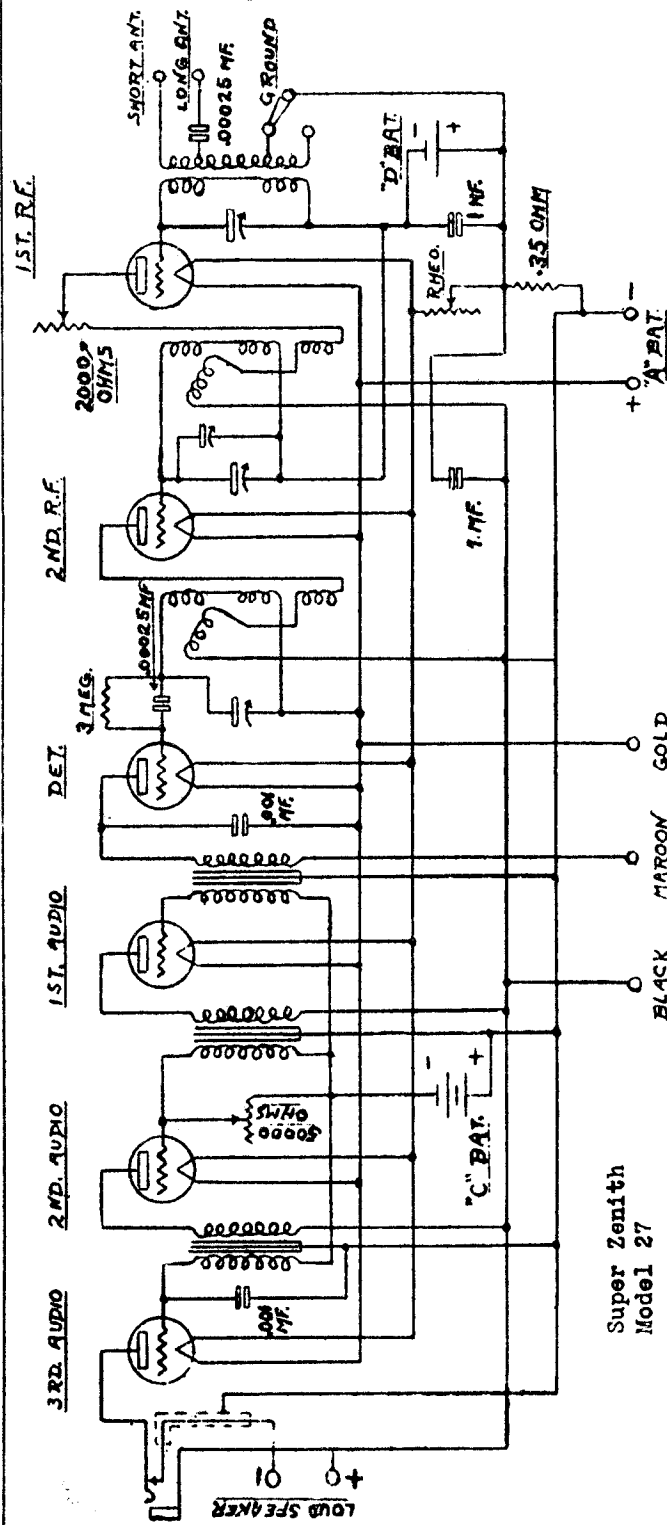


WIRING DIAGRAM
MODEL ZE-17
POWER SUPPLY FOR
MODELS 333-353A

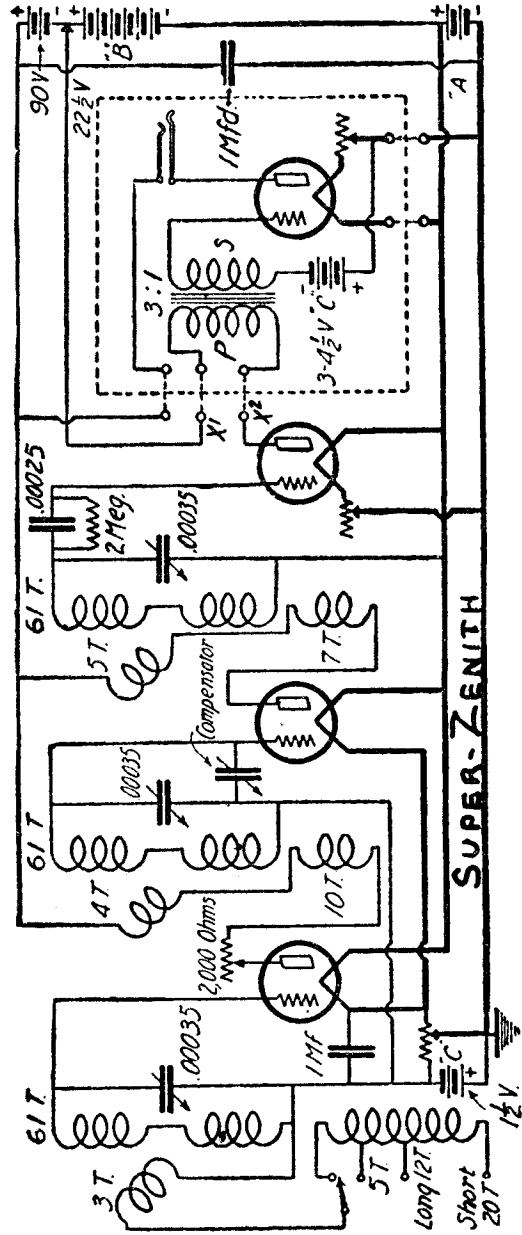
ZENITH RADIO CORPORATION
CHICAGO ILL.

MODEL 27
 Super Zenith
 MODEL Super Zenith

ZENITH RADIO CORP.



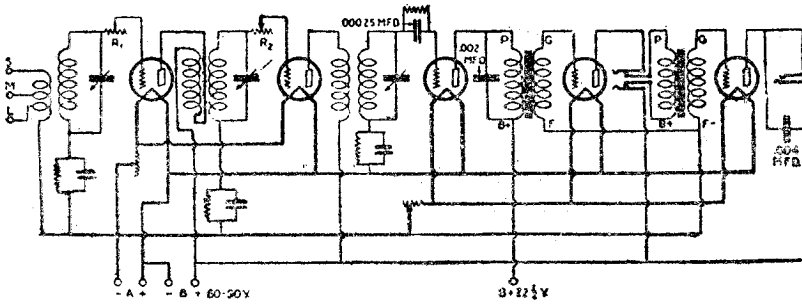
Super Zenith
 Model 27



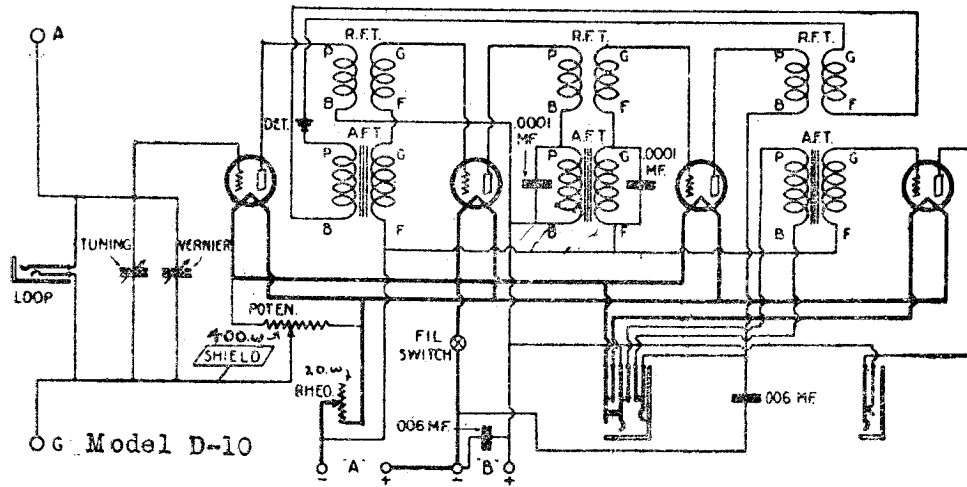
Super Zenith

DEFOREST RADIO CORPORATION

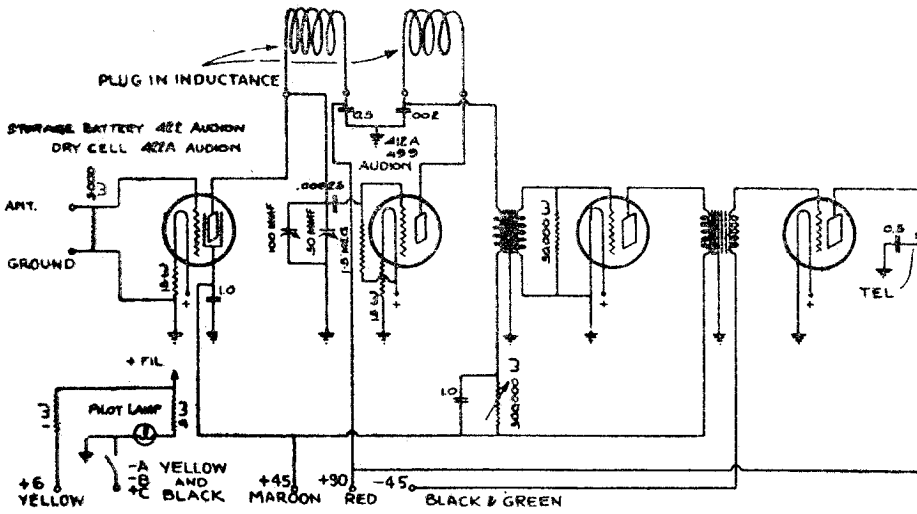
- MODEL F-5
- MODEL D-10
- MODEL CS-5
- MODEL D-17



Model F-5

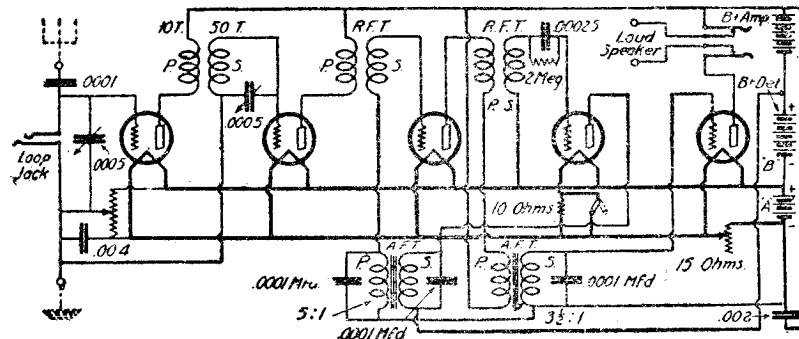


Model D-10



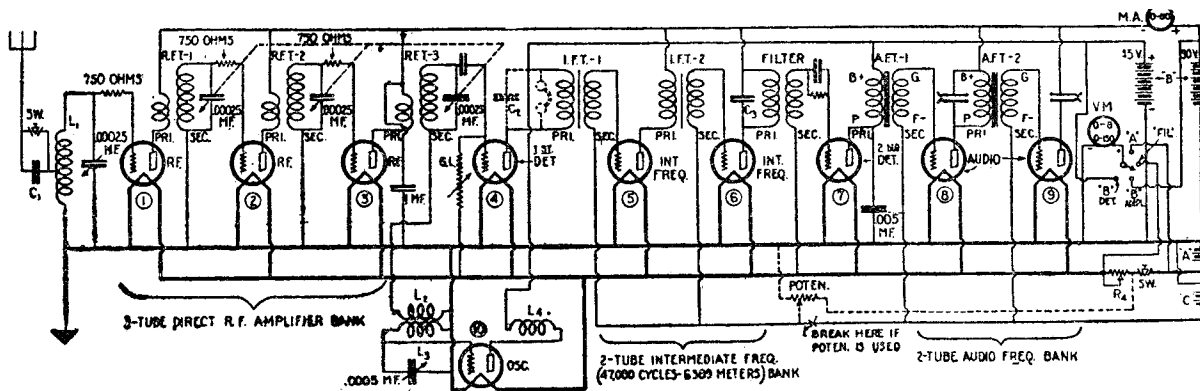
Model CS-5

Model D-17



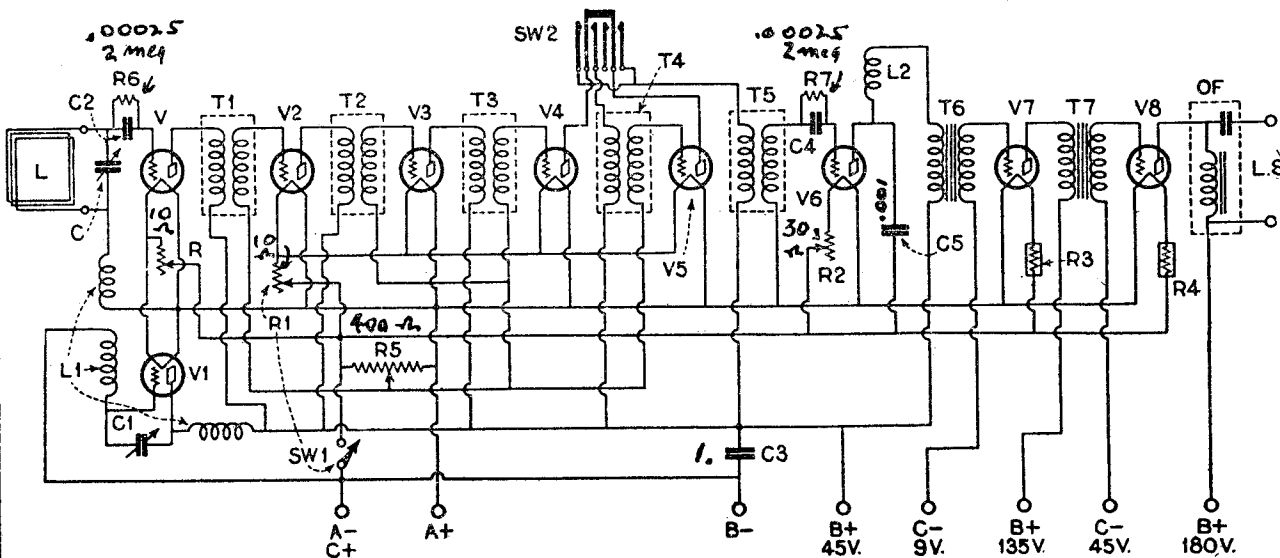
EXPERIMENTERS INFORMATION SERVICE RADIART LABORATORIES

Model Navy C-10



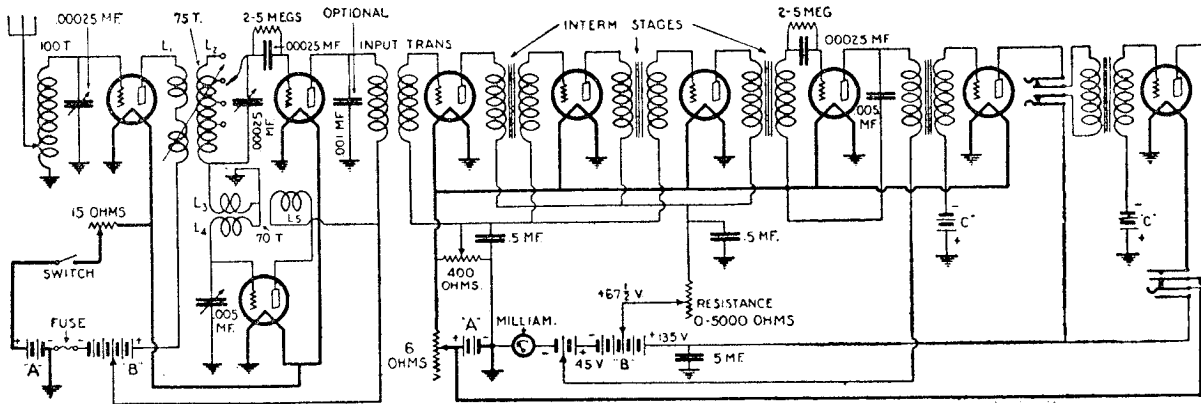
The Experimenters' Information Service Navy Model C-10 super-heterodyne designed for a wave-length range from 600 meters down to 50 meters, the band being covered through the expedient of interchangeable coils.

Model Magnaformer 9-8

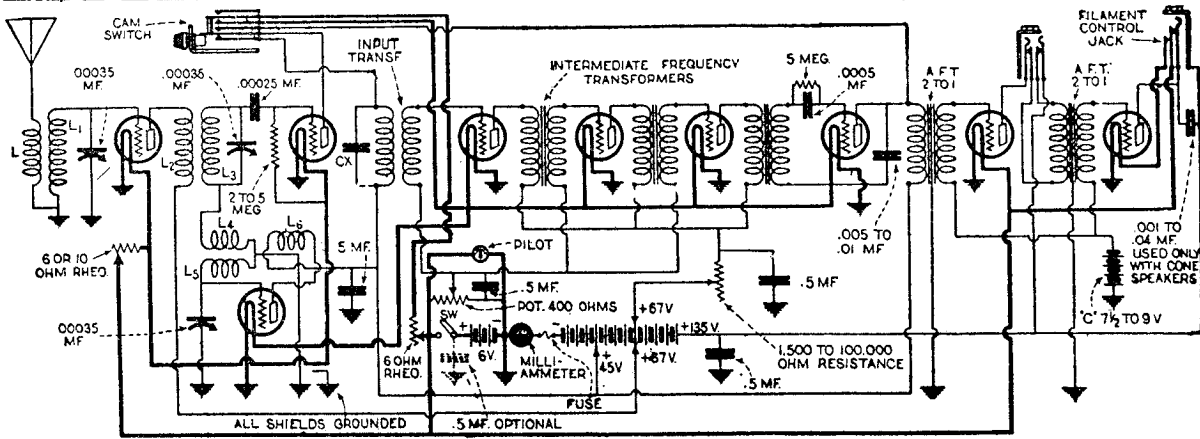


Schematic diagram of the Magnaformer 9-8 Receiver. By means of the cam switch SW2 one stage of I.F. amplification can be cut out. This switch is mounted on the front panel of the receiver, below the drum dials.

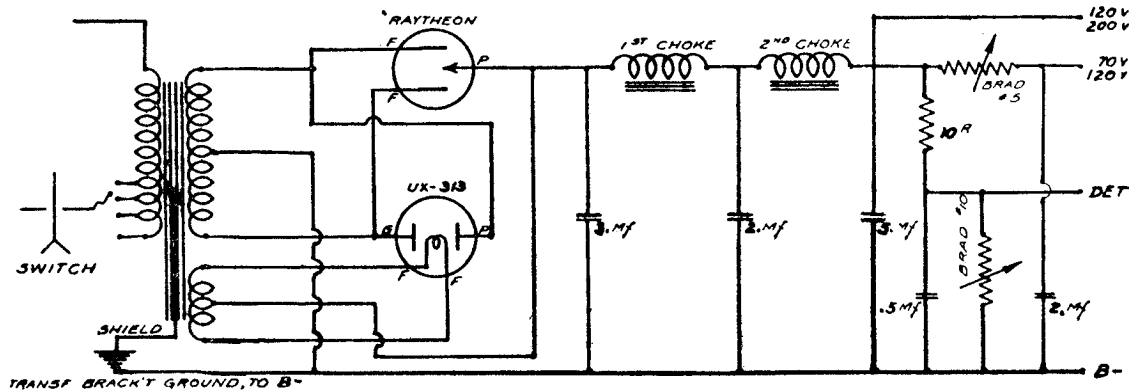
FARRAND FENWAY



Model Fenway Superheterodyne

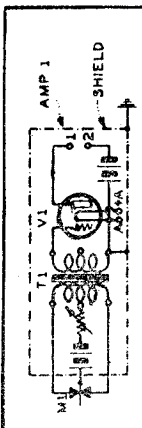
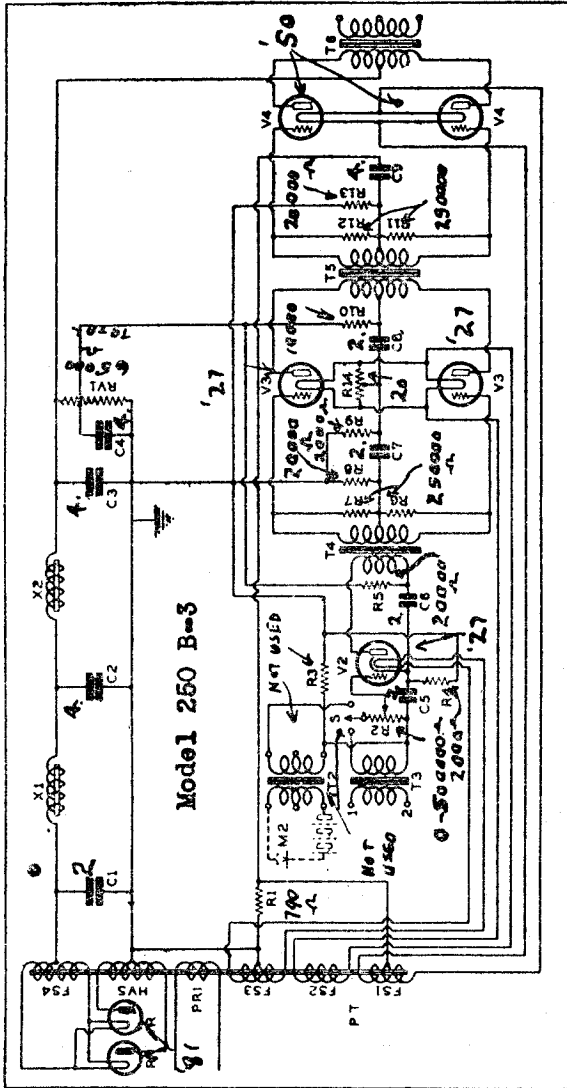


Model Fenway Superheterodyne

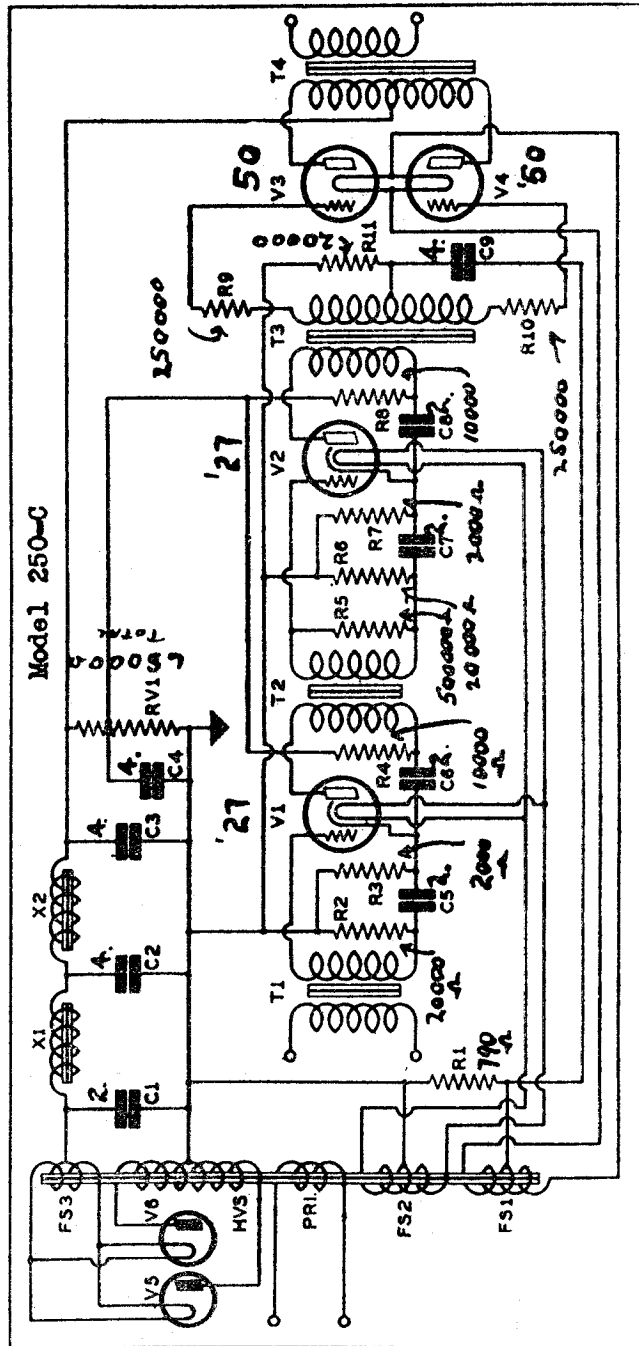


SCHEMATIC DIAGRAM

FERRANTI, INC.

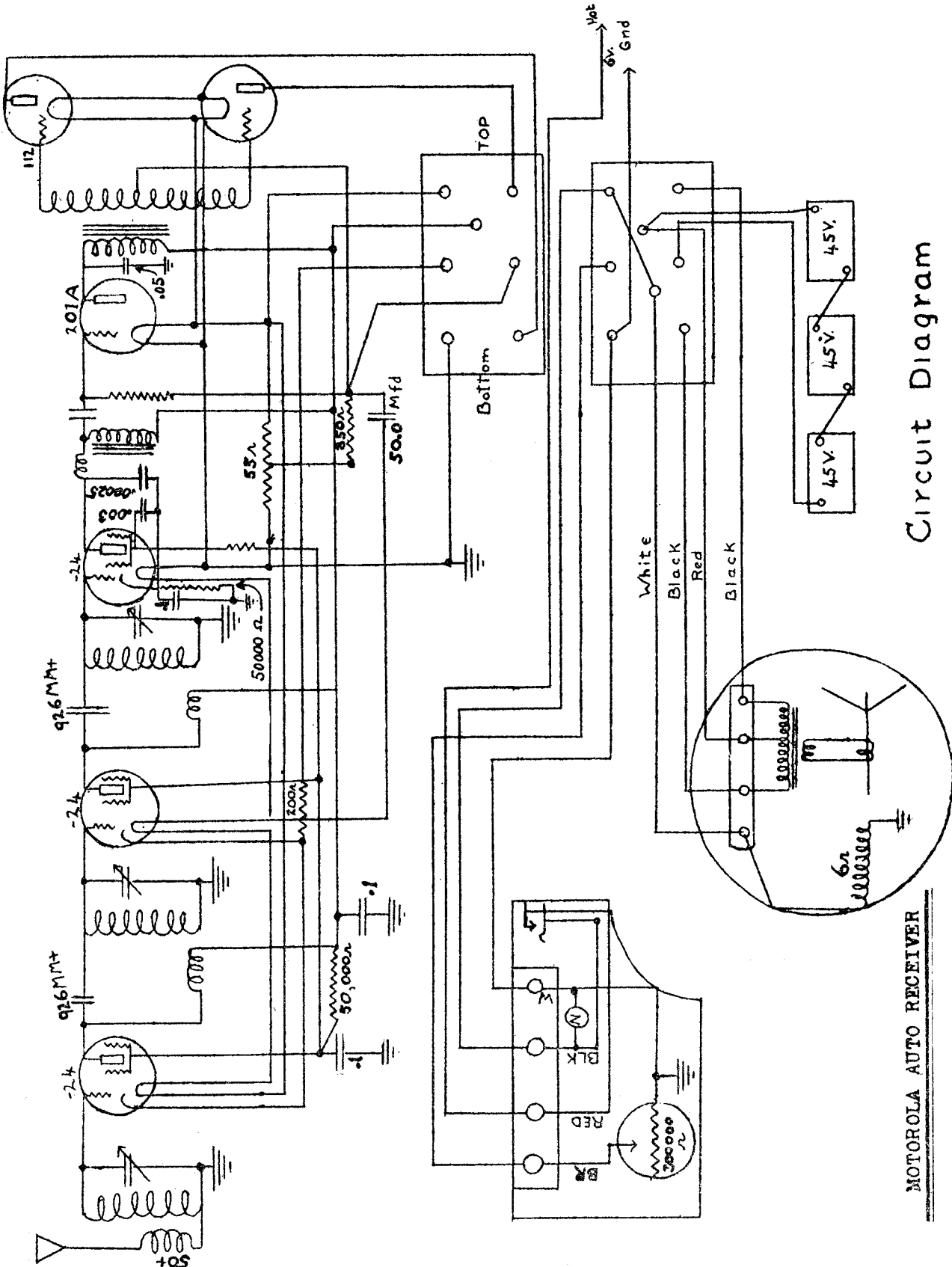


This microphone amplifier is sometimes used with the 250-B3 power amplifier. In such event the parts marked "Not Used" are in operation. These parts are normally omitted from the 250-B3 unit.



GALVIN MFG. CO.

MODEL Motorola
Auto Receiver

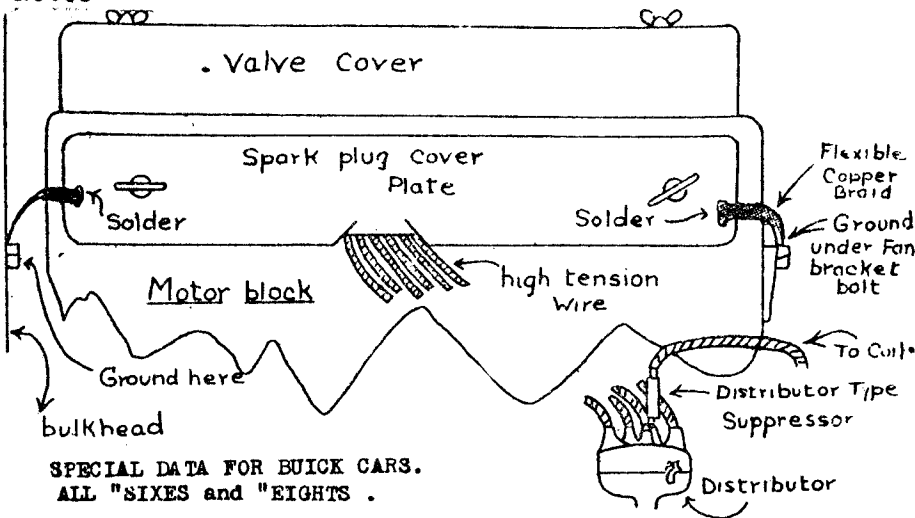


Circuit Diagram

MOTOROLA AUTO RECEIVER

MODEL Motorola
Auto Receiver
Notes

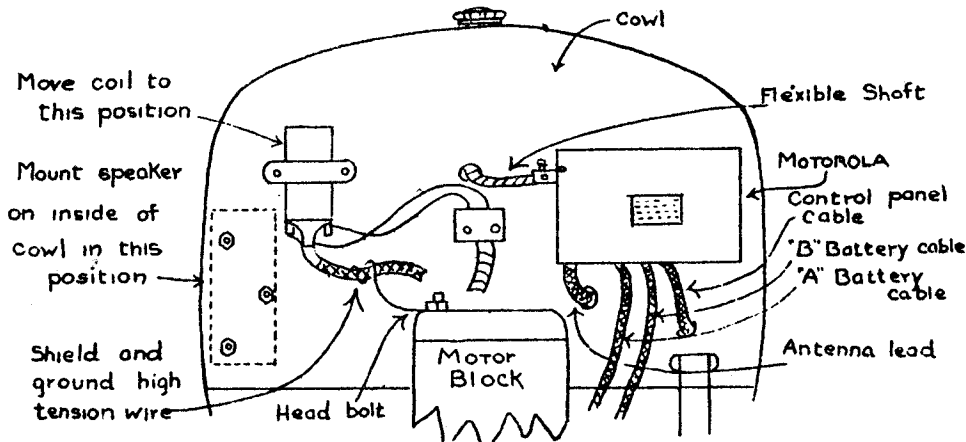
GALVIN MFG. CO.



SPECIAL DATA FOR BUICK CARS.
ALL "SIXES and "EIGHTS .

- (a) The above illustrates a method of grounding the spark plug cover plate found on all Buick cars. Do not be misled by the fact that this plate is apparently grounded by the two aluminum wing nuts holding it to side of motor, for this is in no way a ground for the type of current radiating from spark plugs which cause radio interference. Soldering flexible jumpers to this cover plate and grounding same under motor or chassis bolts will in every case help eliminate motor noise in radio reception.
- (b) As a further help on the new model Buick Eights, it will be found advisable to solder copper bonds to all the control shafts passing through bulkhead and grounding these to bulkhead. By "control shafts" we mean choke rods, carburetor heat control, motor temperature indicator, etc.

maximum signal obtainable. If operation is satisfactory to this point, the volume should be turned all the way on, the station selector knob turned to a point where no signal is received, the motor of car started and there should be no motor noise noticeable.



SPECIAL DATA FOR MODEL "A" FORD CARS

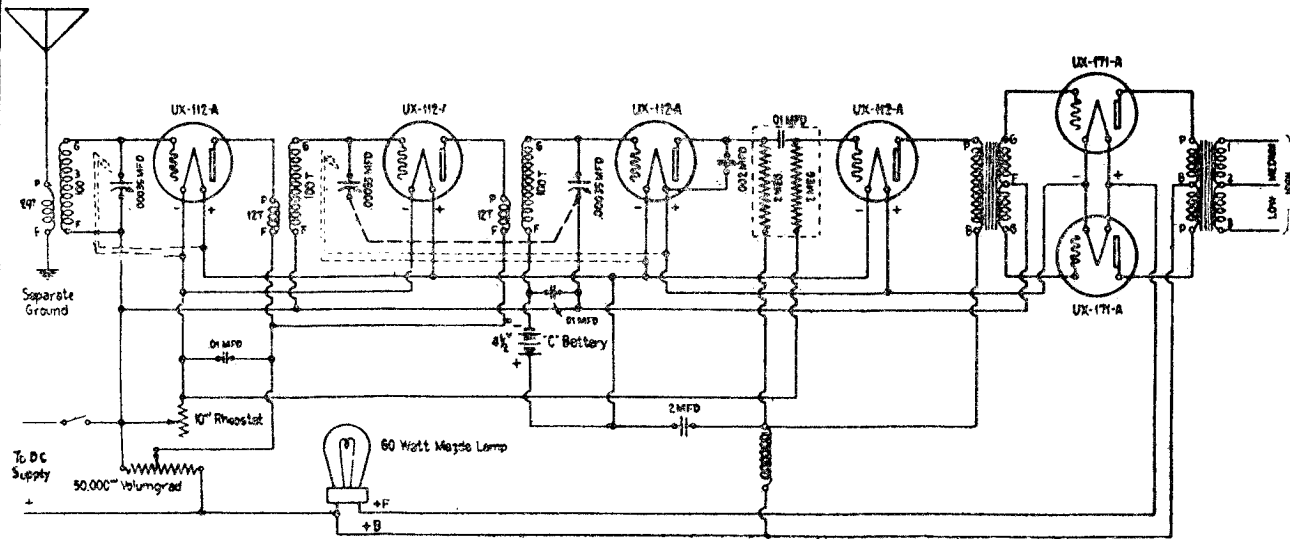
The above illustrates the proper mounting of a Motorola receiver on a Model "A" Ford car. On inspection you will note that it is necessary to move the ignition coil over to side of cowl. This is done for two reasons, one to make room for the flexible shaft to pass through cowl and the other to help in elimination of motor noise.

It is advisable to shield the high tension lead from coil to distributor and ground this shielding to motor block as per diagram.

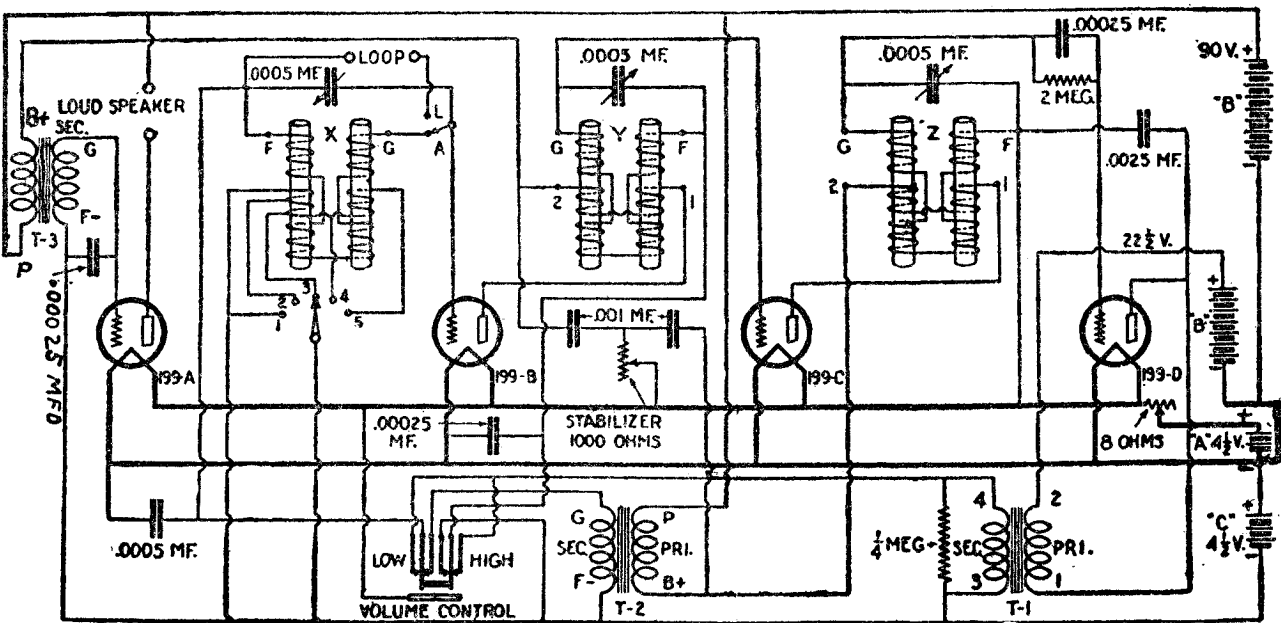
The speaker will be found to mount best on the inside of cowl to the right side of car above foot board.

Different cars will have different types of antennae and their capacities with respect to the frame of the car will be different, therefore it will be necessary to phase the antenna with the set. Remove the four screws holding the set lid in place, turning the set on and tuning to a very weak station. Adjust with a screw driver the small trimming condenser, to the

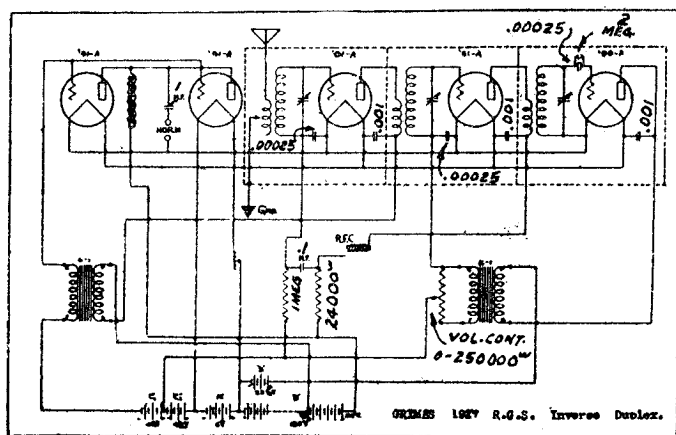
DAVID GRIMES, INC.



GRIMES 110 Volt D.C. - ("NEW YORKER")

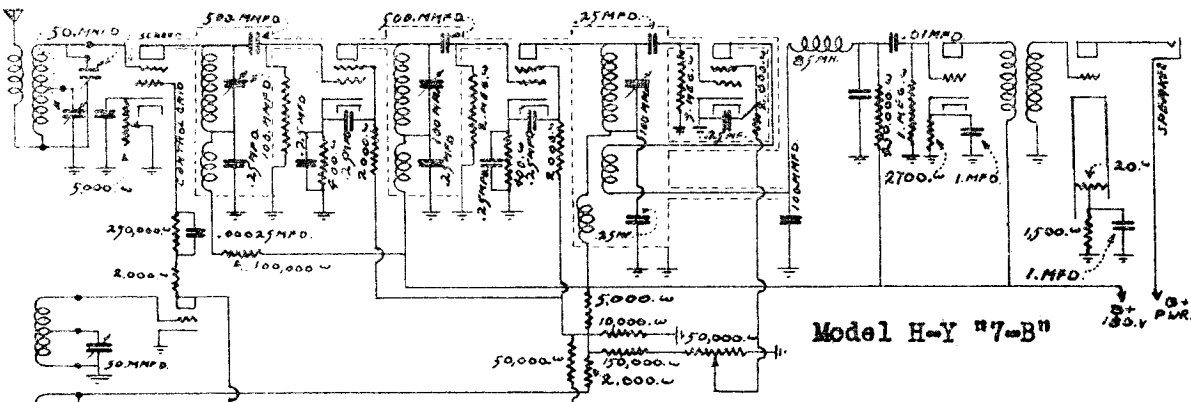
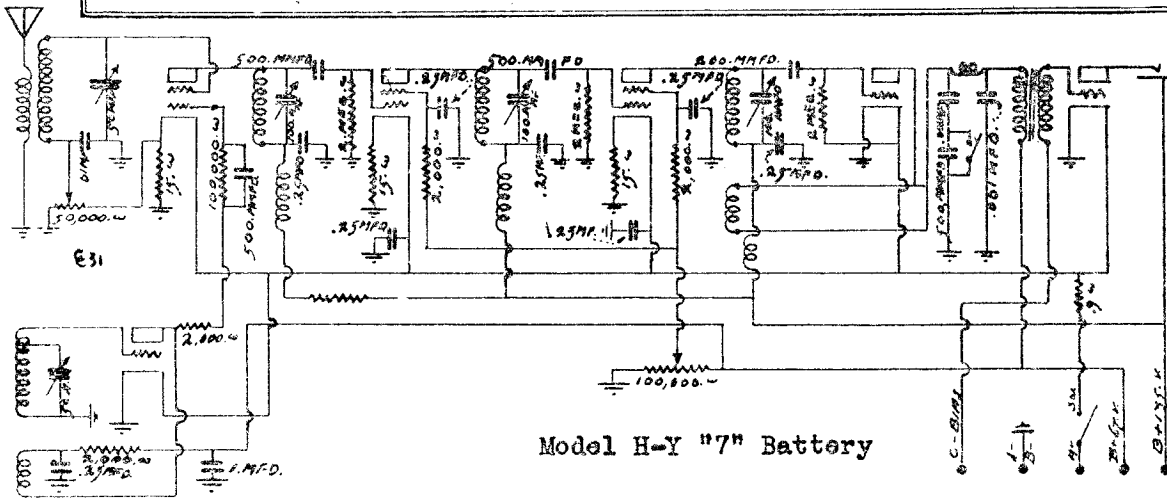
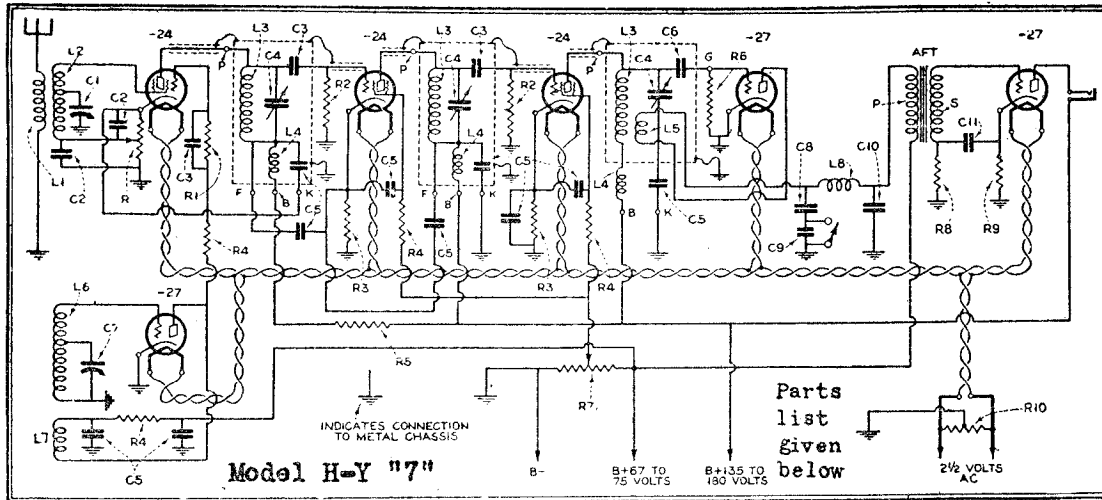


AERIAL GROUND GRIMES Type 4-DL Inverse Duplex (Reflex) Circuit



GRIMES 192V R.G.S. Inverse Duplex.

HATRY & YOUNG

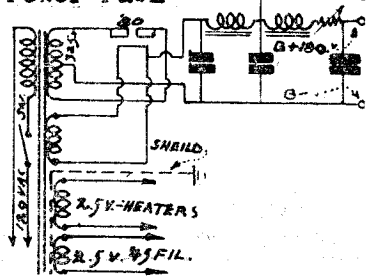


Model H-Y "7-B"

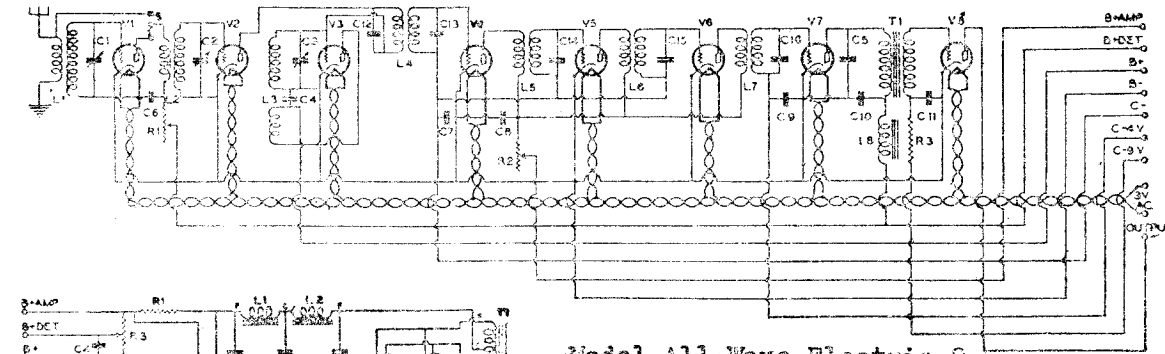
Power Pack

- R1—100,000-ohm Durham metallic leak.
- R2—2-megohm Durham metallic leak.
- R3—400-ohm Electrad suppressor resistance.
- R4—2,000-ohm Electrad suppressor resistance.
- R5—25,000-ohm Durham metallic.
- R6—3-megohm Durham metallic.
- R7—25,000-ohm Electrad royalty potentiometer.
- R8—50,000-ohm Durham metallic.
- R9—2,250-ohm Durham metallic.
- R10—10-ohm centre-tapped Yaxley.

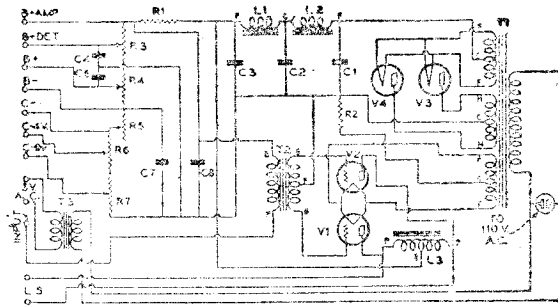
- C1—50 mmfd. midget pilot.
- C2—.01 mfd. Sangamo fixed condenser.
- C3—.0005 mfd. Sangamo fixed condenser.
- C4—100 mmfd. Hammarlund equalizer, range with L3 about 1650-1475 kc.
- C5—.25 mfd. Sprague midget fixed condenser.
- C6—.0002 mfd. Sangamo fixed condenser.
- C7—Same as C1.
- C8—.00015 Sangamo.
- C9—.00005 mfd. Sangamo.
- C10—.001 mfd. Sangamo.
- C11—1 mfd. Flechthelm.
- R—5,000-ohm Electrad royalty potentiometer.



R. E. LACAULT

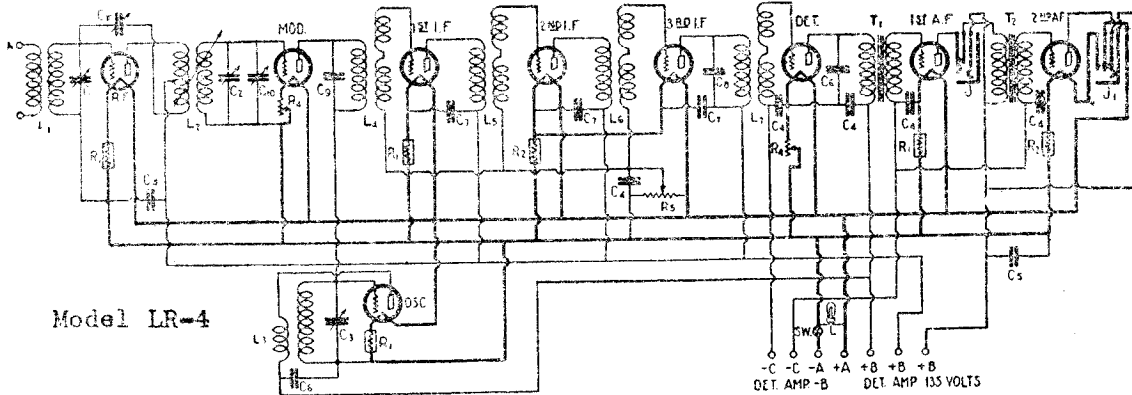


Model All-Wave Electric 3

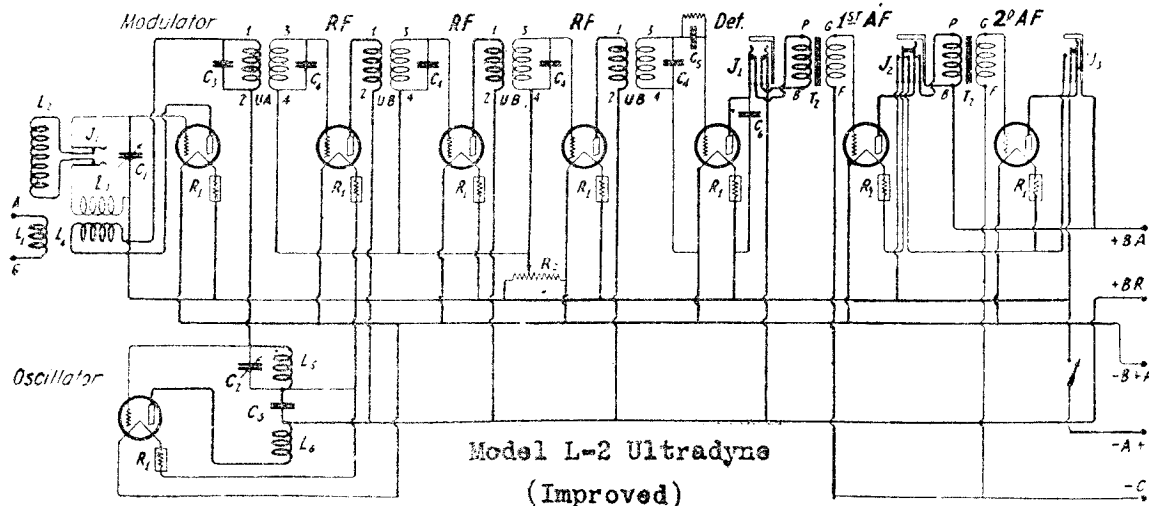


- C1, C2 and C3—Variable condensers, 2000 mfd.
- C1 to L7—R.E.L. plug-in coils;
- L5—Audio-frequency choke;
- T1—Audio-frequency transformer;
- R1 and R2—Variable resistors;
- C4—Fixed condenser, .001 mfd.
- C5—Fixed condenser, .002 mfd.
- C6 to C9—By-pass condensers, .5 mfd., 150 volts;
- C10 and C11—By-pass condensers, 1. mfd., 500 volts;
- C12 to C15—Fixed condensers, .00025 mfd.
- V1 to V8—Heated cathode a.c. tubes:
- R3—Fixed resistor, 100,000 ohms;
- 1 Front panel;
- 1 Sub-base panel;
- 10 Binding posts;
- 2 Stage shields;
- 8 Coil sockets;
- 6 Tube sockets;
- 1 Drum dial;
- 1 Grid-leak mounting;
- 2 Condenser extension shafts;
- 2 Tip Jack and plugs;

- The parts required for building the amplifier-power unit are as follows:
- T1—Full-wave, power transformer;
 - T2—Push-pull, audio-frequency transformer;
 - T3—Filament transformer;
 - L1 and L2—Audio-frequency chokes;
 - L3—Center-tapped, audio-frequency choke;
 - C1, C2 and C3—Filter condensers, 2 mfd., 500 volts;
 - R1—Fixed resistor, 4,000 ohms, 50 watts;
 - R2—Fixed resistor, 750 ohms, 25 watts;
 - R3 and R4—Variable resistors, 10,000 ohms;
 - R5—Rheostat, 60 ohms;
 - R6 and R7—Variable resistors, 500 ohms;
 - C4 to C7—Fixed condensers, 1 mfd., 400 volts;
 - V1 and V2—Power tubes, '10 type;
 - V3 and V4—Rectifier tubes, '81 type;
 - 4 Tube sockets;
 - 12 Binding posts;
 - 1 Front panel;
 - 1 Sub-base panel;
 - 1 110-volt receptacle.

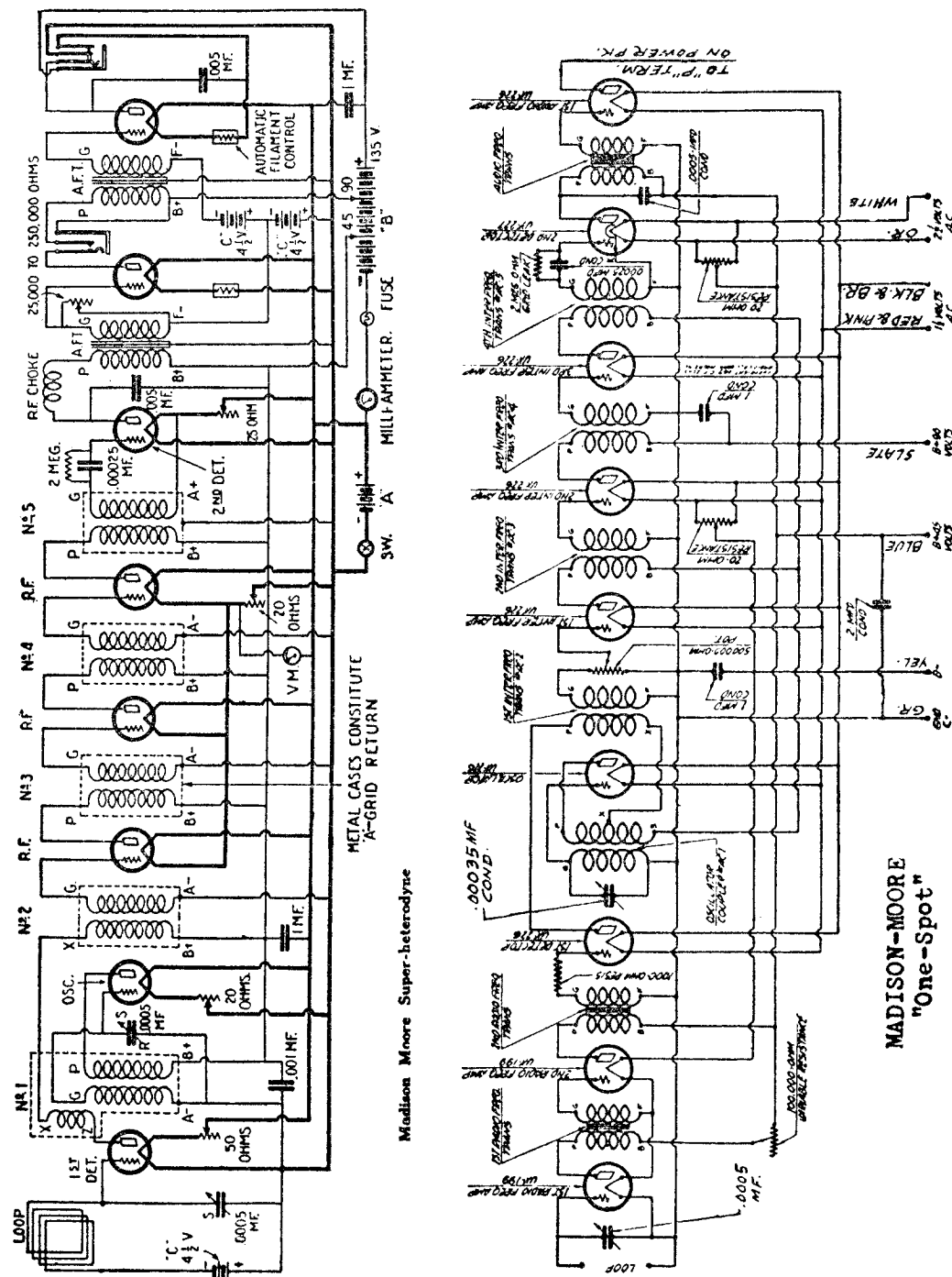


Model LR-4



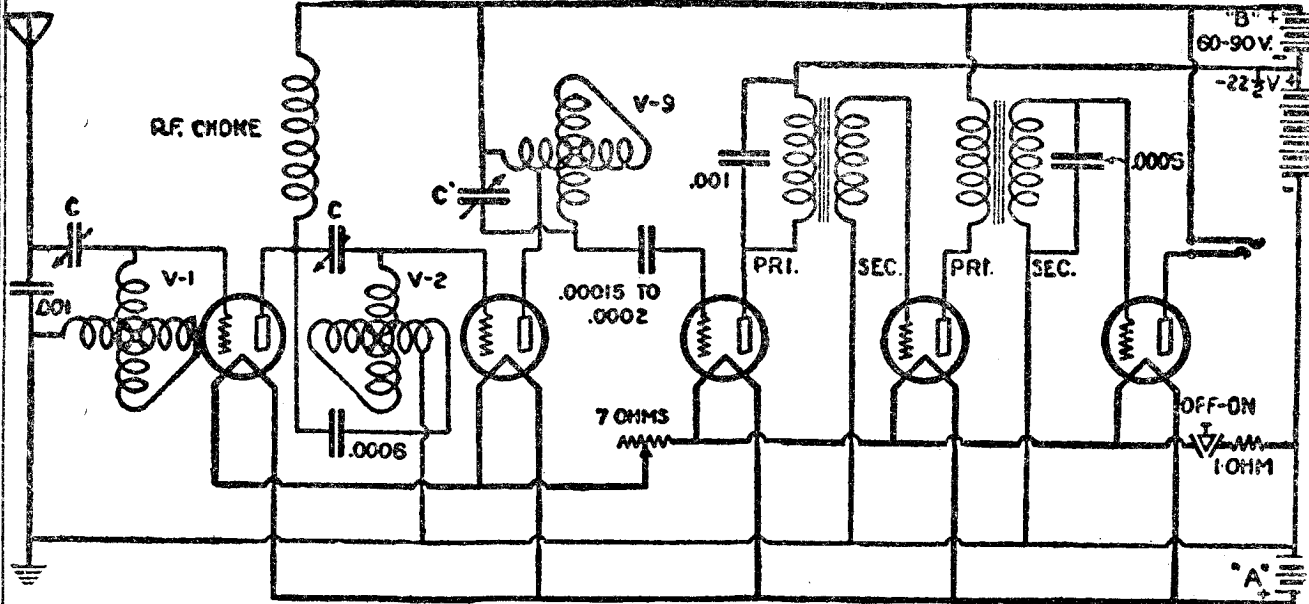
Model L-2 Ultradyne (Improved)

MADISON-MOORE

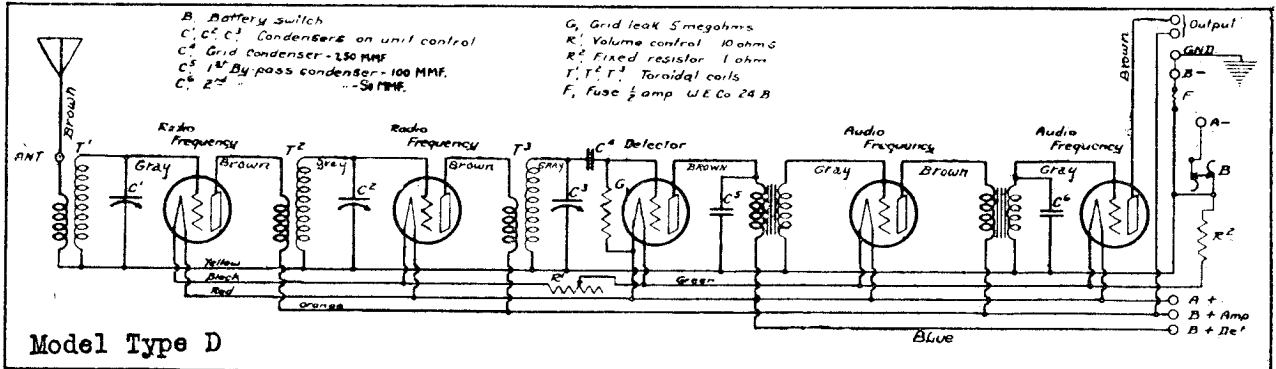
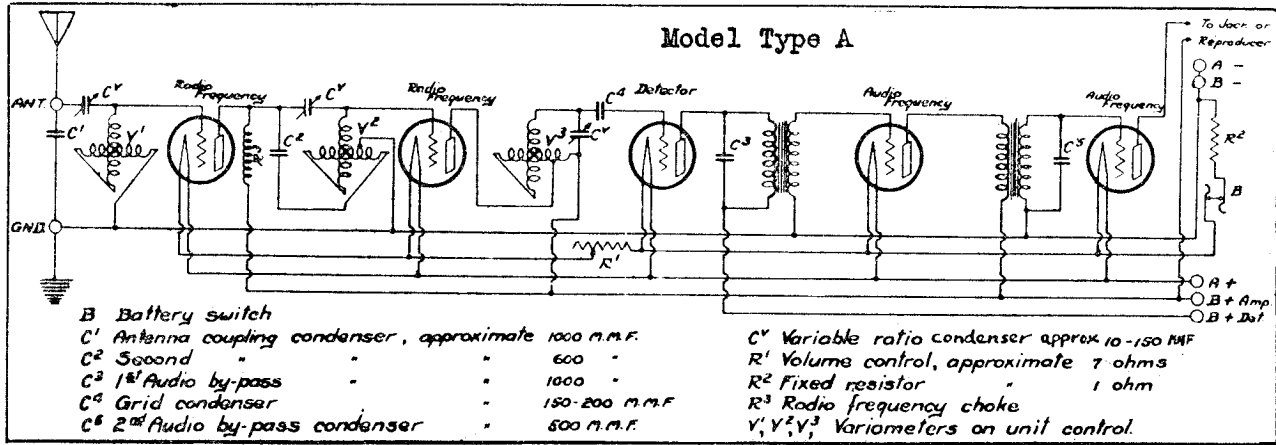


THE MAGNAVOX CO.

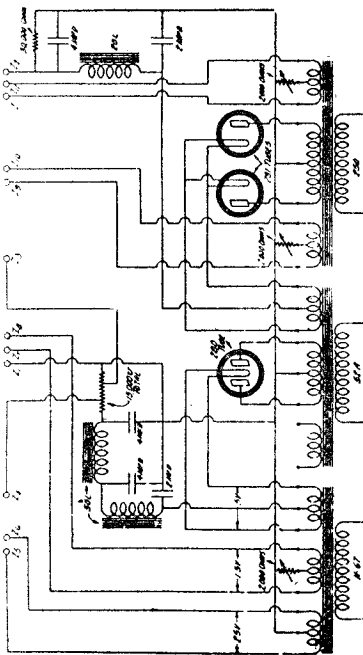
MODEL "One Dial"
 MODEL "A"
 MODEL "D"



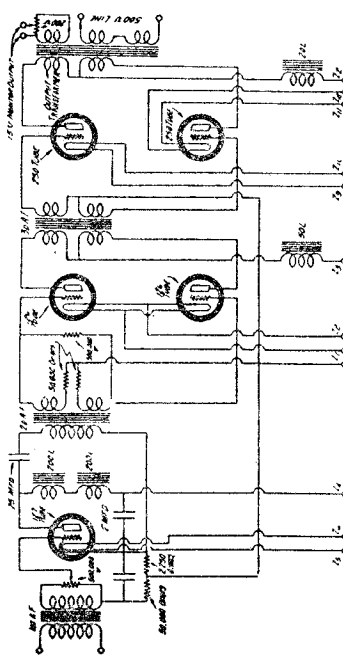
Model "One Dial"



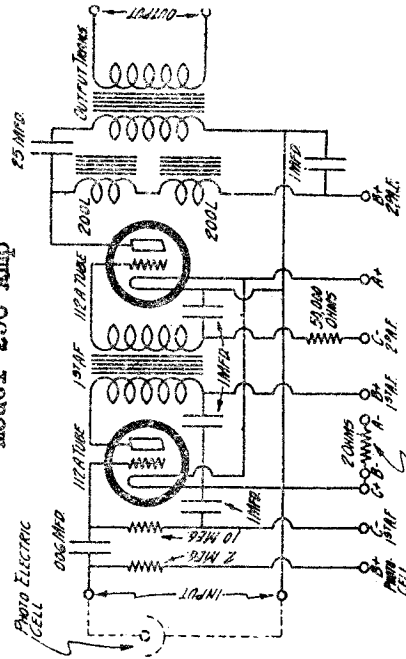
MAJOR LABORATORIES



Model 250 Power Amplifier Power Supply.

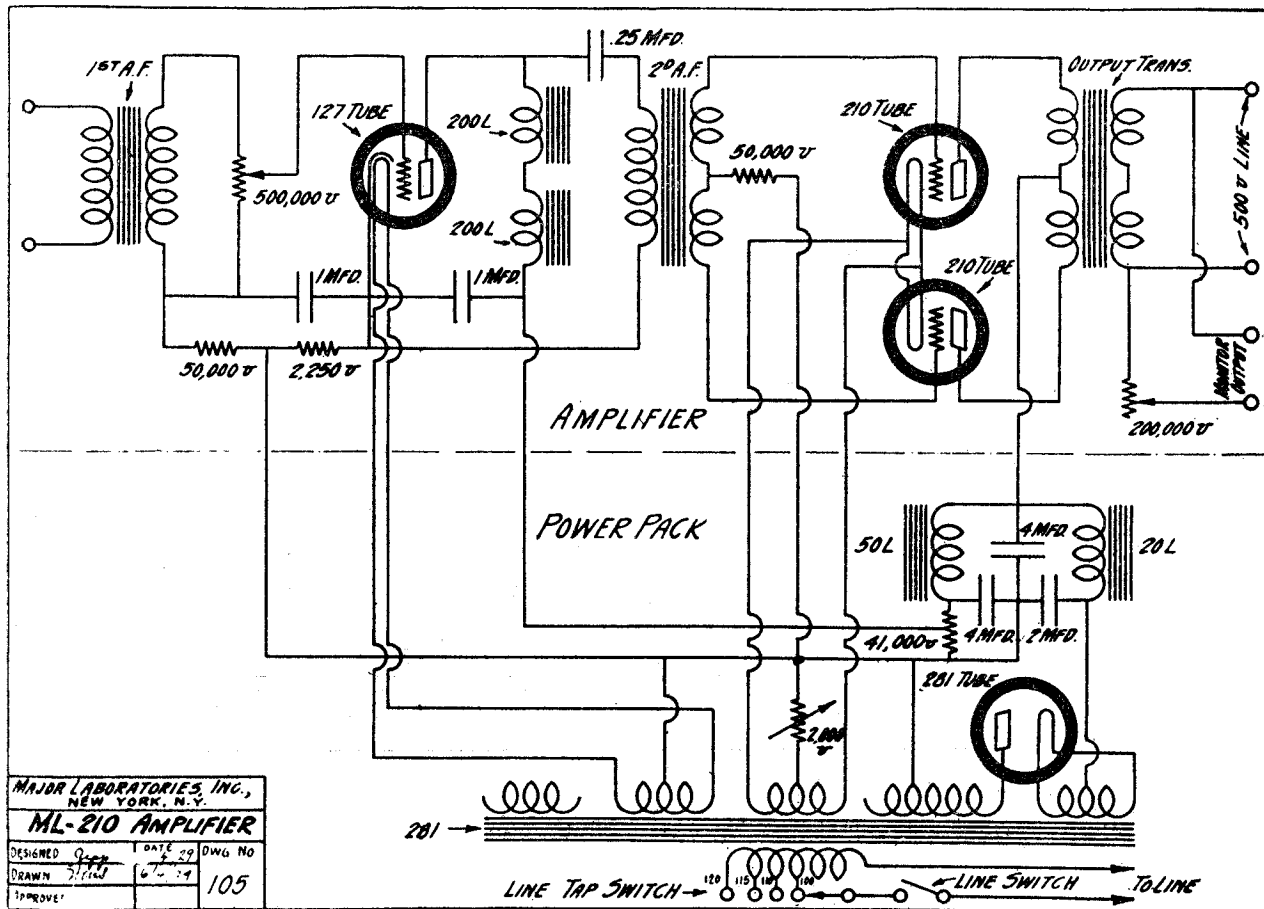


Model 250 Amp



Model 12

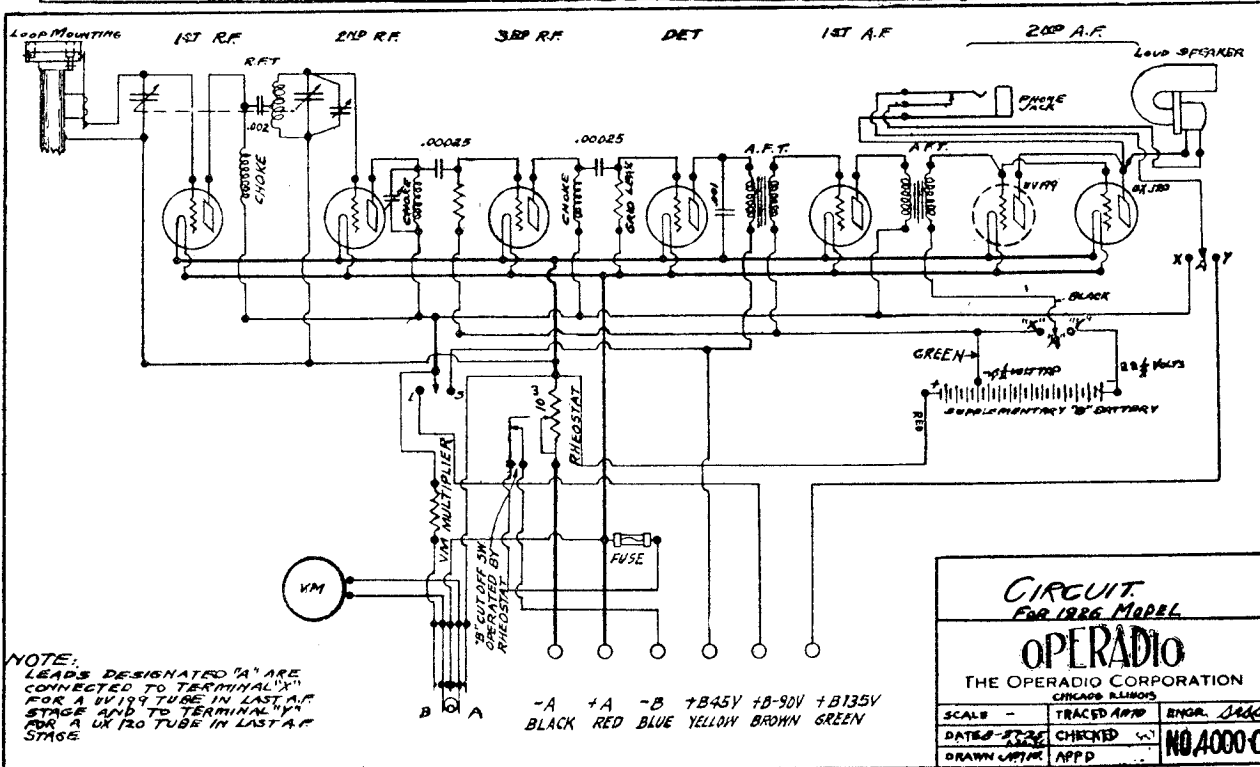
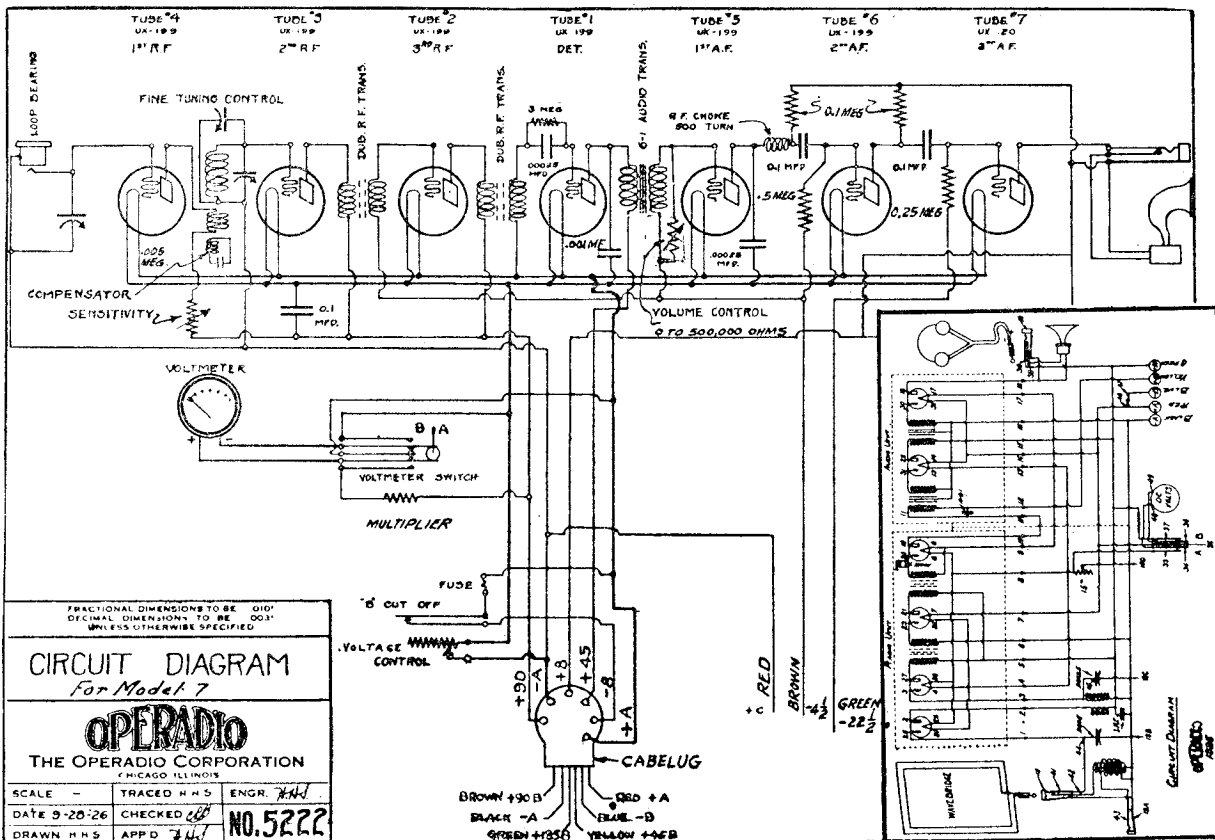
FOR 6 VOLT A SUPPLY.
15 OHMS FOR 12 VOLT SUPPLY.



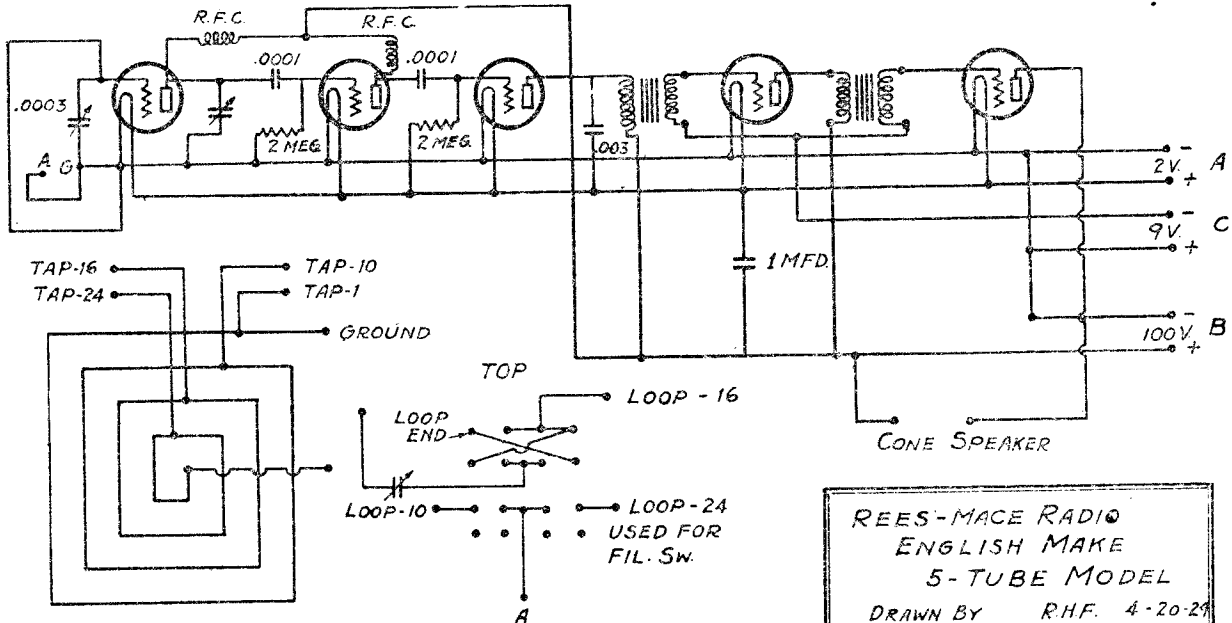
MAJOR LABORATORIES, INC., NEW YORK, N.Y.			
ML-210 AMPLIFIER			
DESIGNED	DATE	DWG NO	
DRAWN			
APPROVE		105	

OPERADIO CORP.

MODEL 1925
MODEL 1926
MODEL 7

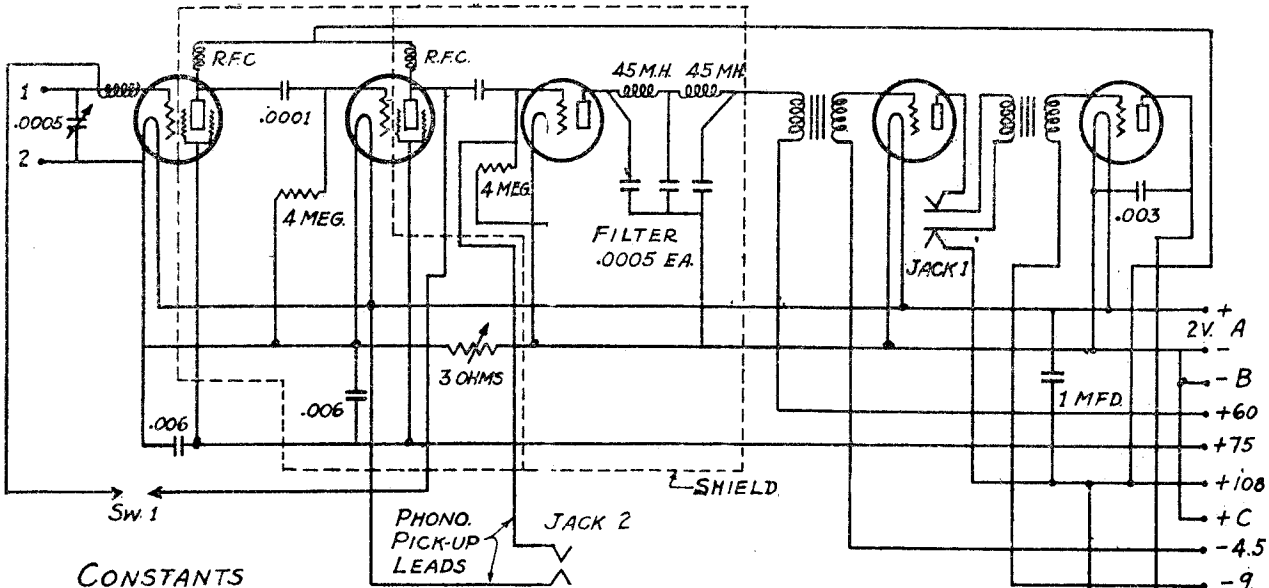


REES - MACE



REES-MACE RADIO
 ENGLISH MAKE
 5-TUBE MODEL
 DRAWN BY R.H.F. 4-20-29
 CHECKED BY J.H.A. JR.

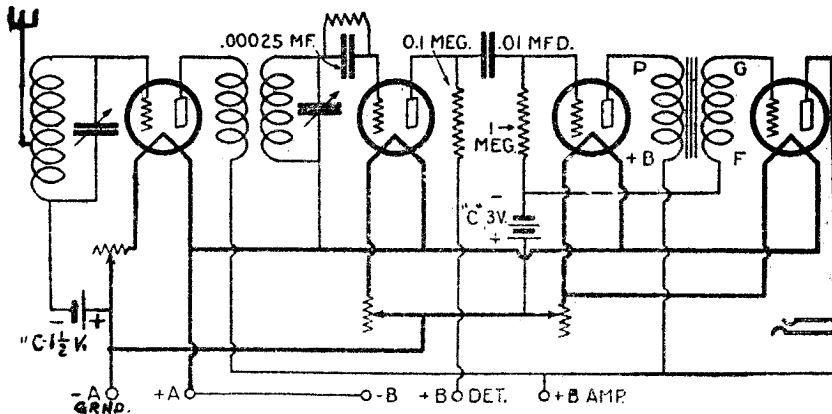
36T No. 24 D.C.C. WIRE The sets available only from John Handwerker N.Y.



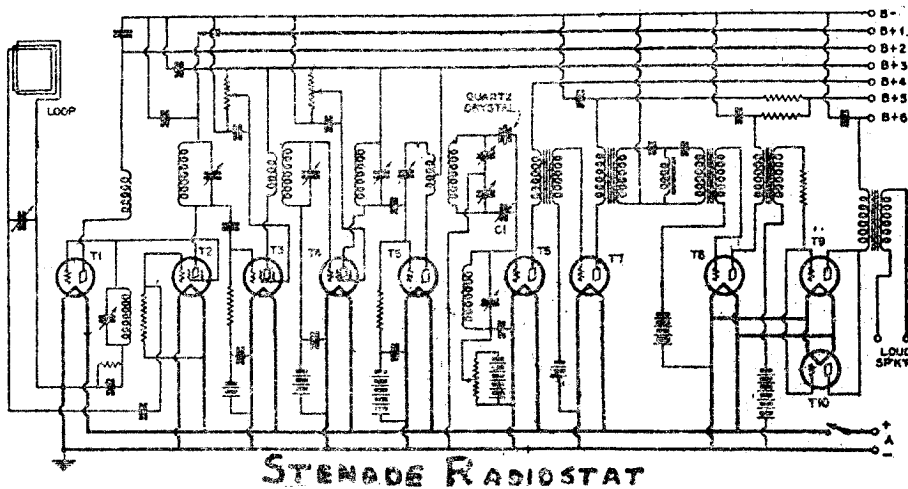
REES-MACE RECEIVER
 FIVE TUBE IMPROVED
 SCREEN GRID
 ENGLISH MAKE
 DRAWN BY R.H.F. 4-22-29
 CHECKED BY J.H.A. JR.

CONSTANTS
 No. 1 AND 2 LOOP CONNECTIONS
 Sw.1 IS A PUSH PULL SWITCH WITH
 A VERY LOW CAPACITY
TUBE SOCKET DATA
 G F+ PLATE CONNECTION COMES
 F- S.G FROM TOP OF TUBE.

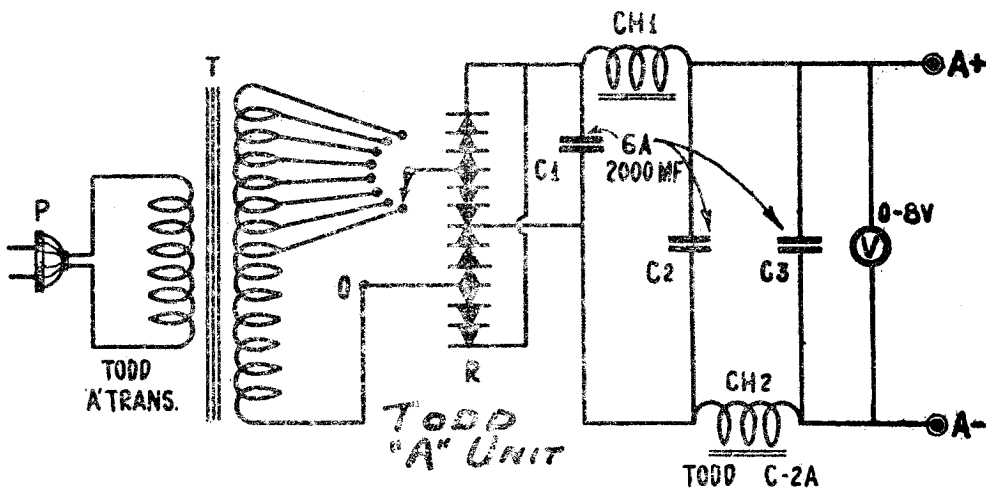
M. B. SLEEPER
 STENODE RADIOSTAT
 TODD ELECTRIC COMPANY



Sleeper RX-1 Receiving Circuit.

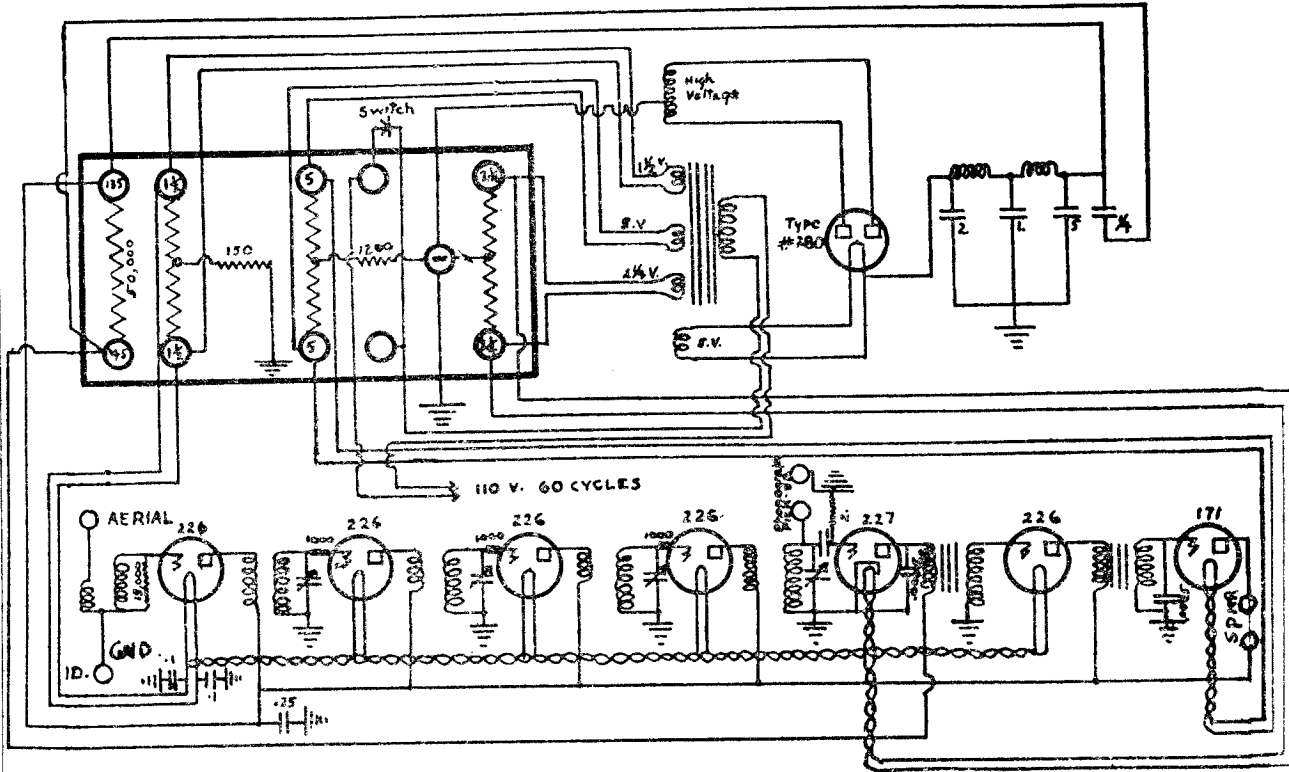


STENODE RADIOSTAT

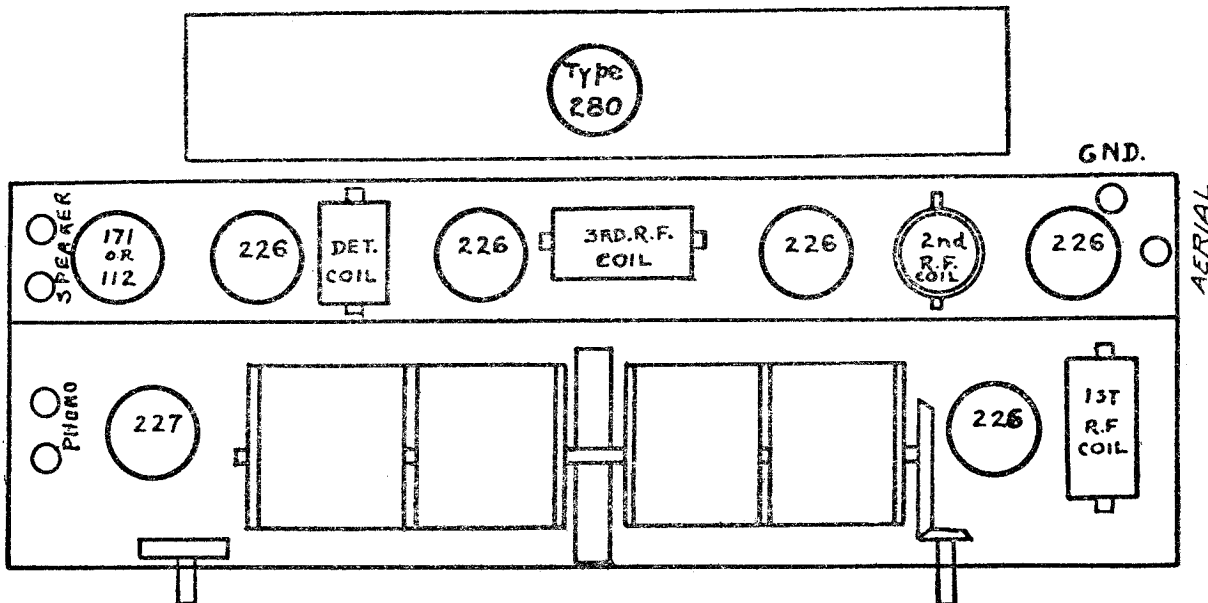


STANDARD RADIO CORP.

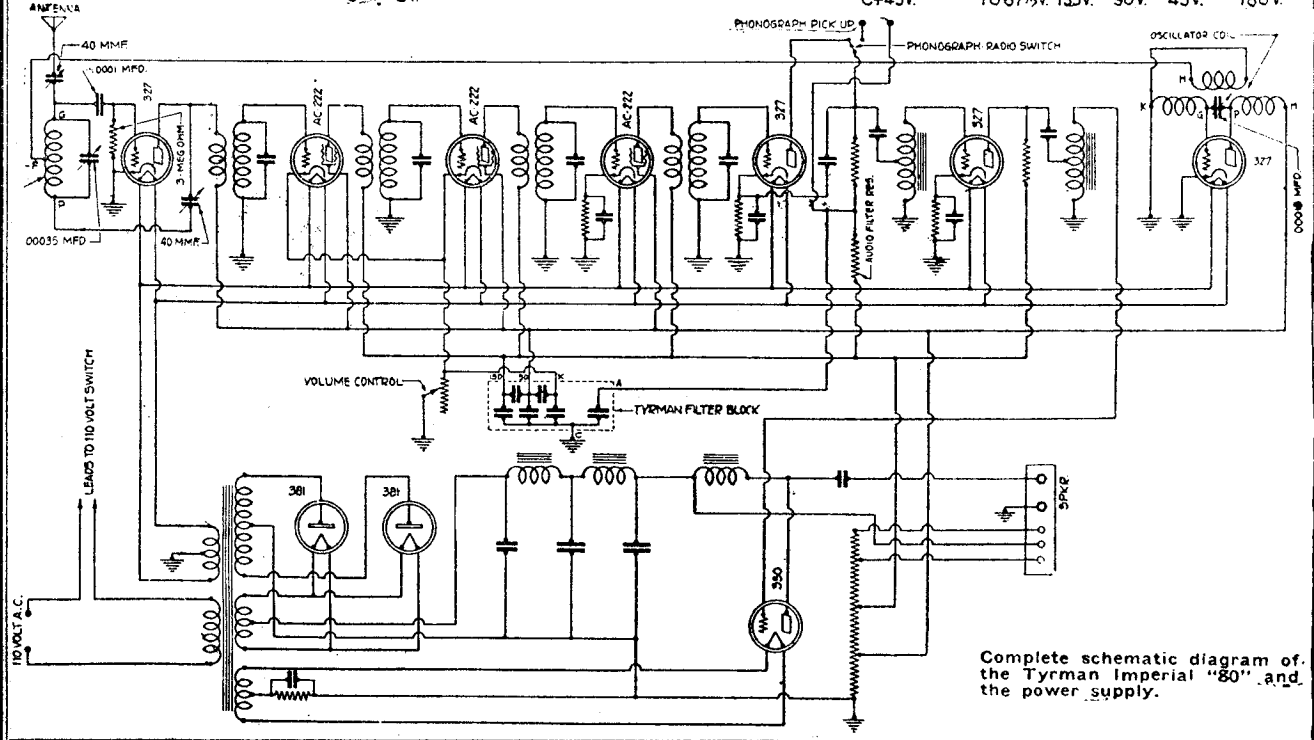
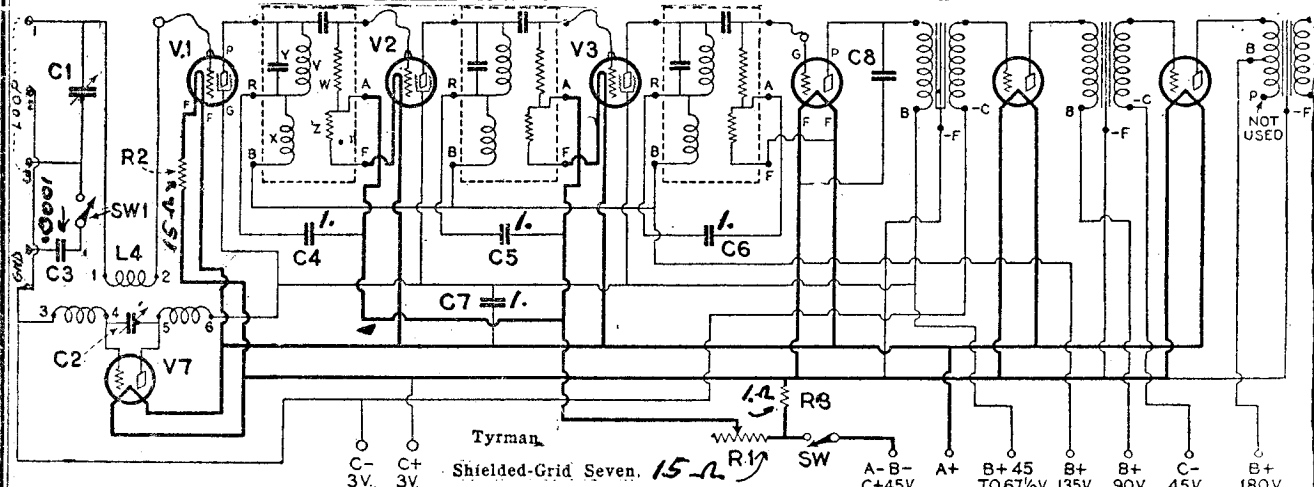
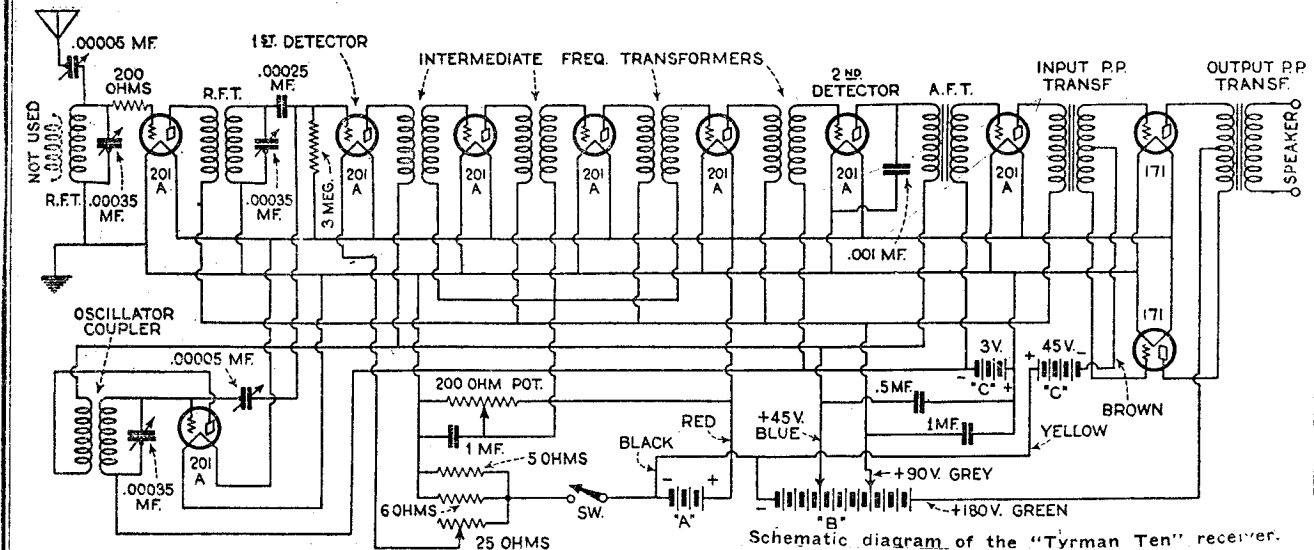
MODEL AC 29



Standarddyne A C Model 29
50 to 60 cycles - 100 to 120 volts

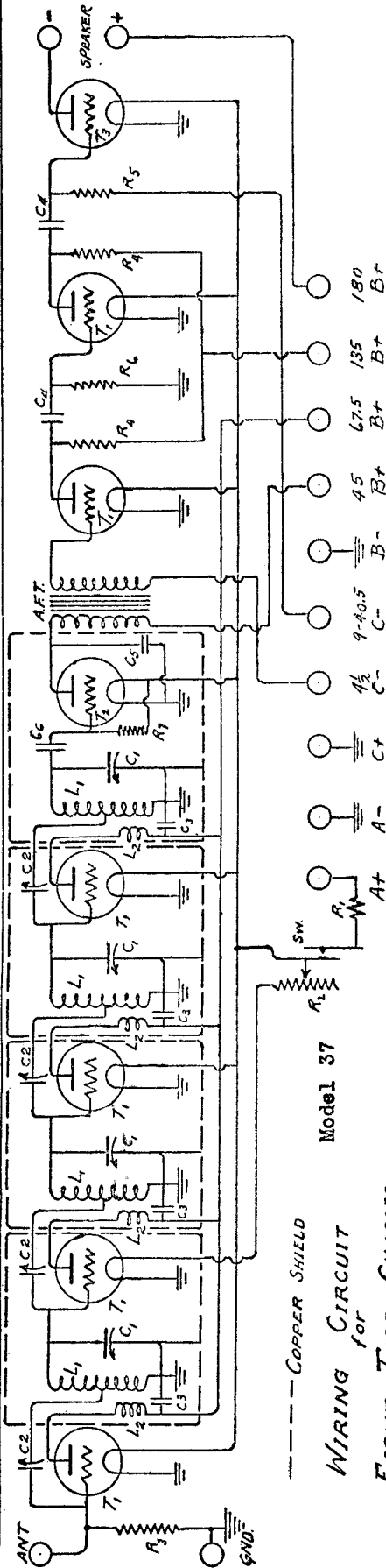


TYRMAN ELECTRIC CORP.

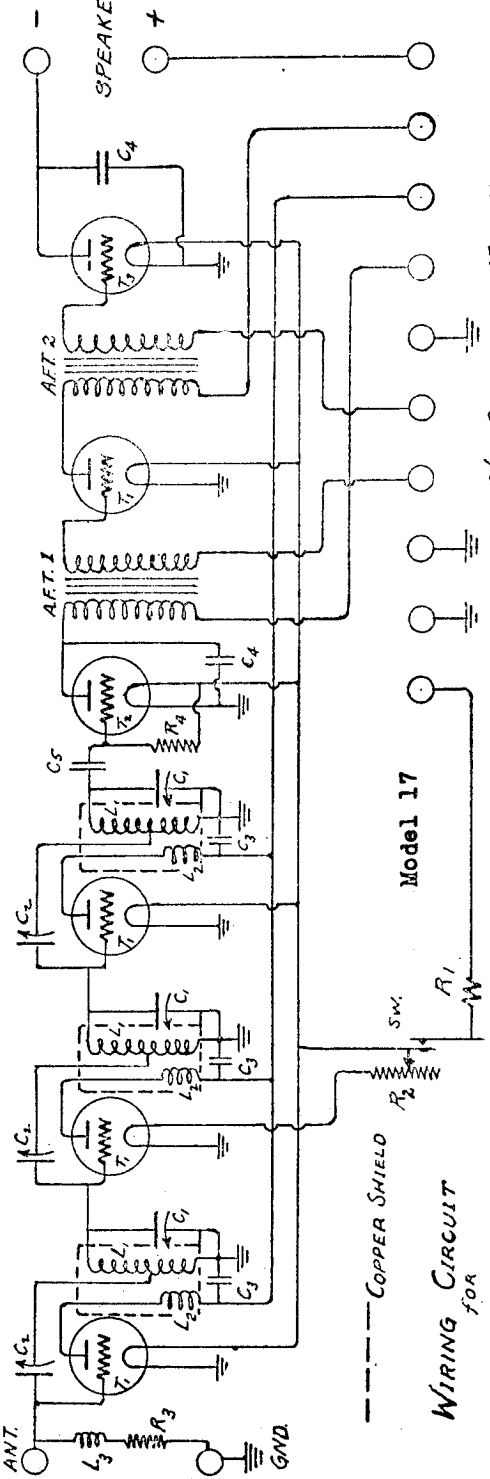
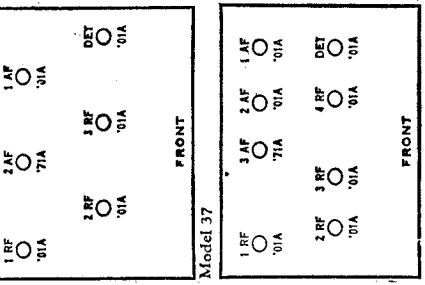


U. S. ELECTRIC CORP.

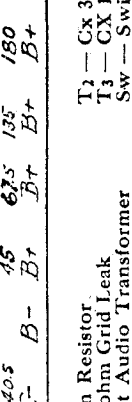
MODEL 17
MODEL 37
Schematic



- L1 — Secondary of R. F. Transformer
- L2 — Primary of R. F. Transformer
- C1 — 500 MMF Variable Capacitor
- C2 — Neutrodon Capacitor
- C3 — 1. MF By Pass Condenser
- C4 — .1 MF Coupling Capacitor
- C5 — .002 MF By Pass Condenser
- C6 — .00025 MF Grid Condenser
- R1 — Fil. Resistance Unit, 2.35 AMP
- R2 — 25 ohm Rheostat-Switch
- R3 — 5000 ohm Resistor
- R4 — 50,000 ohm Resistor
- R5 — 100,000 ohm Resistor
- R6 — 500,000 ohm Resistor
- R7 — 2 Meg ohm Grid Leak
- A.F.T. — Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 300-A Detector Tube
- T3 — Cx 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch

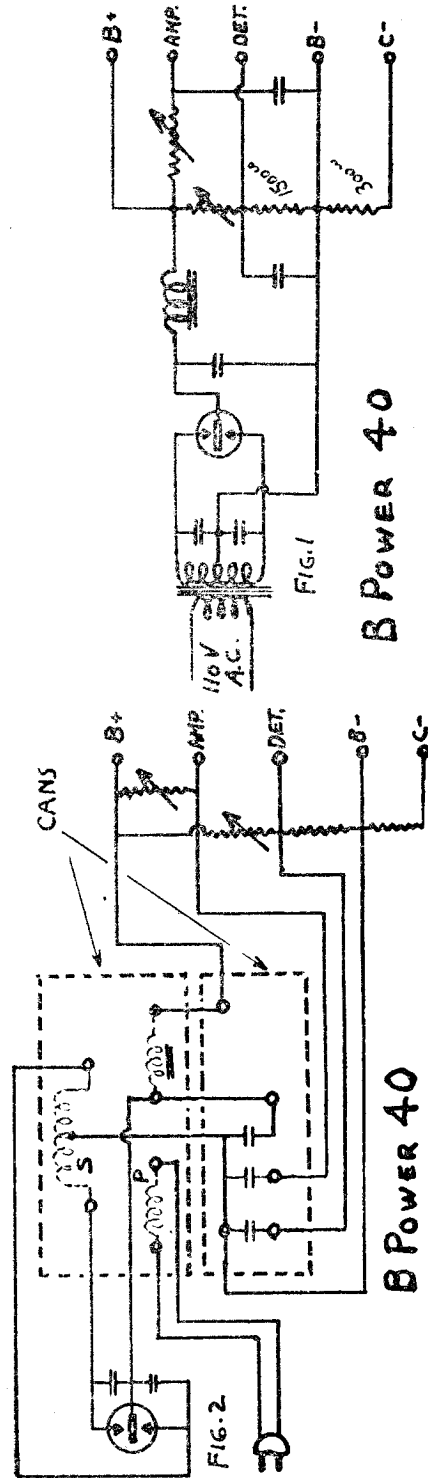
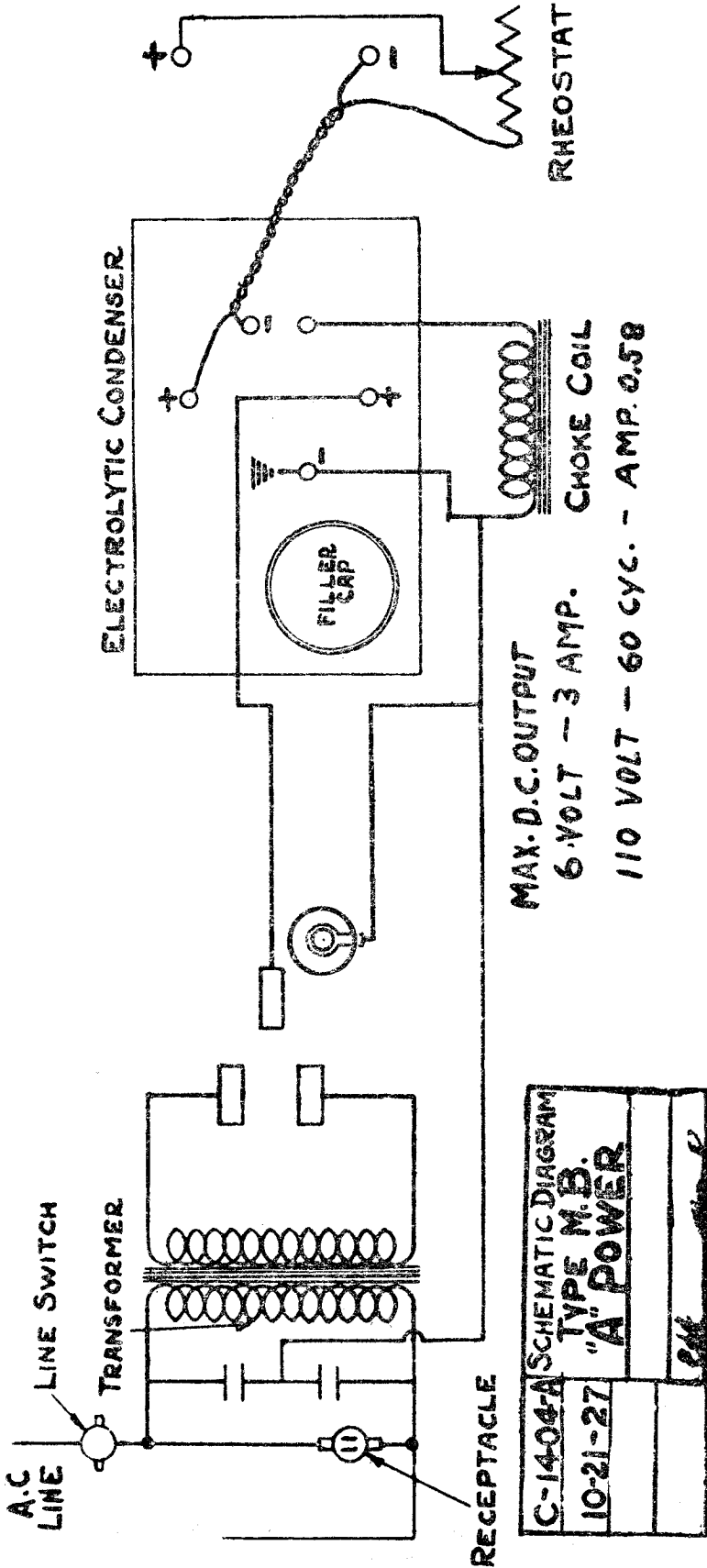


- L1 — Secondary of R. F. Transformer
- L2 — Primary of R. F. Transformer
- L3 — Antenna Choke Coil
- L4 — 350 MF Variable Air Capacitor
- C1 — Neutrodon Capacitor
- C2 — 1. MF By Pass Condenser
- C3 — .002 MF By Pass Condenser
- C4 — .00025 MF Grid Condenser
- C5 — Fil. Resistance Unit, 1.85 Amp.
- R1 — 25 ohm Rheostat Switch
- R2 — 5000 ohm Resistor
- R3 — 350 ohm Resistor
- R4 — 2 Meg ohm Grid Leak
- A.F.T.1 — 1st Audio Transformer
- A.F.T.2 — 2nd Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 300-A Detector Tube
- T3 — Cx 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch



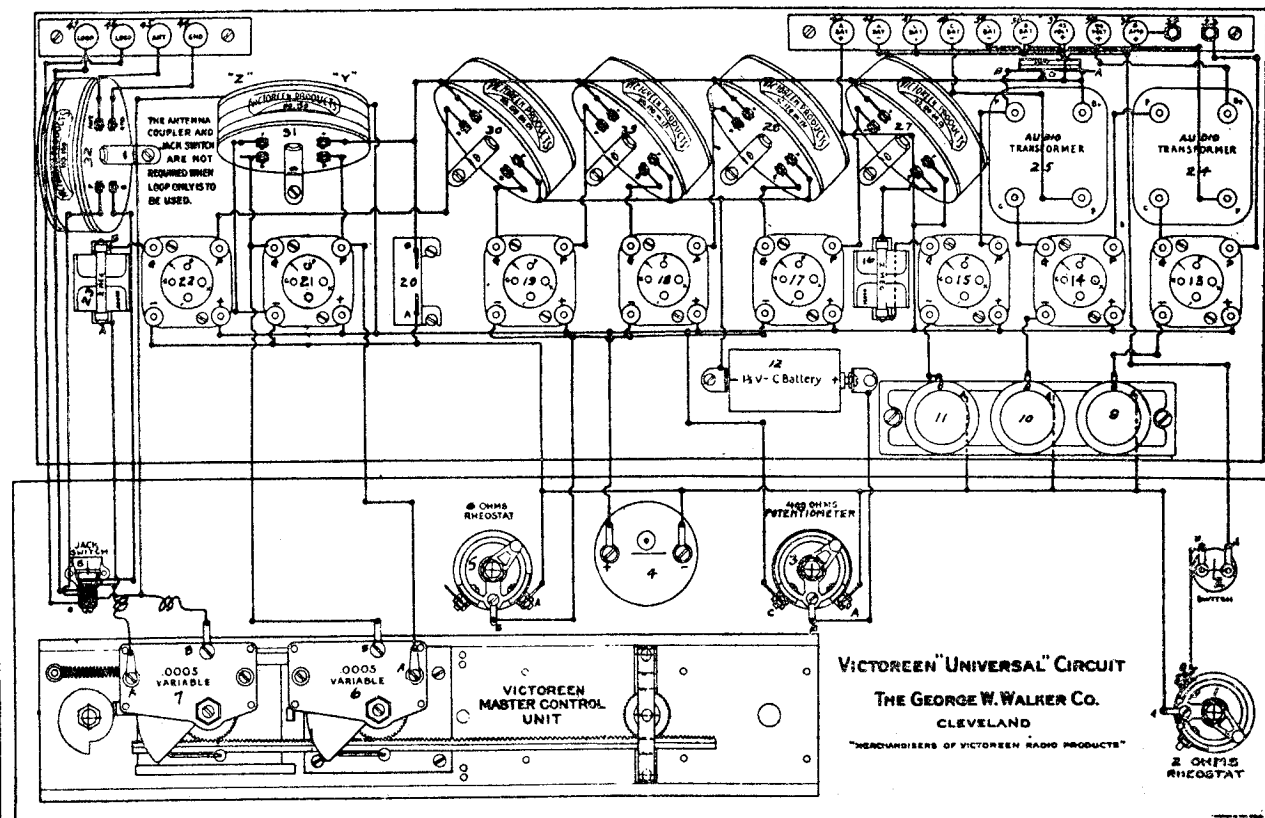
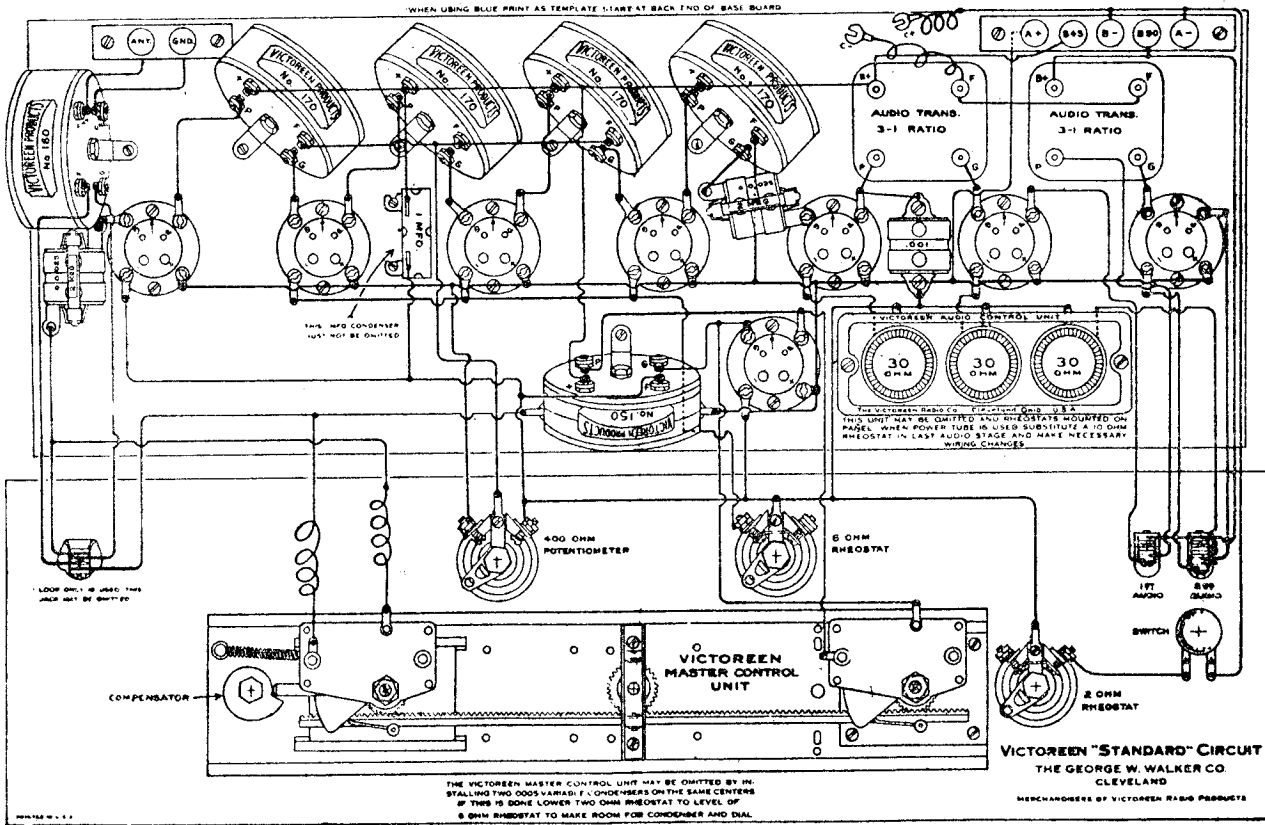
MODEL 17
MODEL 37
Schematic

VALLEY ELECTRIC CO.

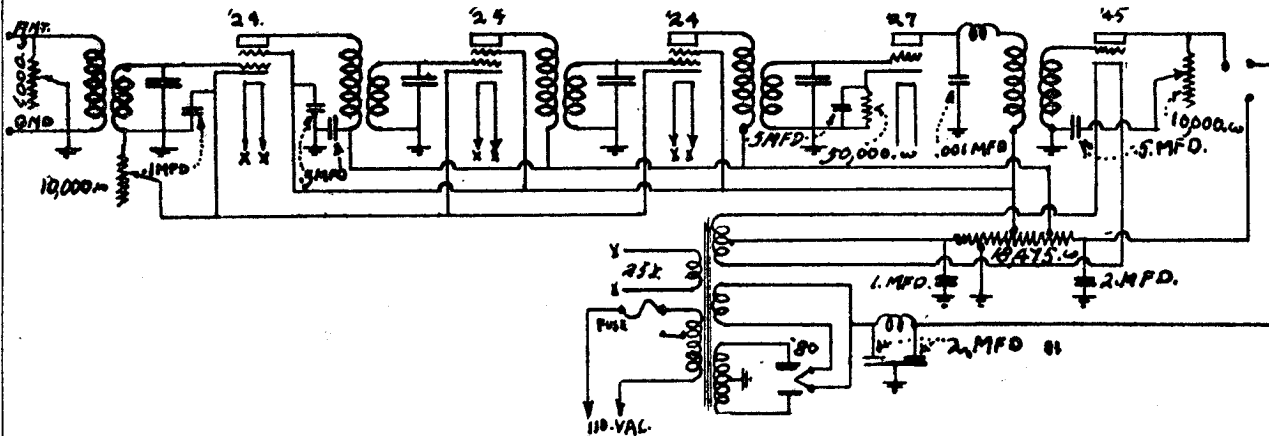


GEORGE W. WALKER CO.

MODEL Victoreen
"Standard"
MODEL Victoreen
"Universal"



ZANEY-GILL CORP.



SWITCH & VOLUME

The switch and volume control are located on the lower right hand knob which, when turned completely to the left, will act as a switch. To increase volume gradually turn to the right until desired output is gained, being careful to see that the tuning indicator is directly on the station signal.

The lower left hand knob operates VITATONE and tone control. The principle of VITATONE is supplying the backward notes with vitality and bringing them to the proper required impetus so that all reception carries *breadth* as well as the other registers. A further use of VITATONE is the elimination of line noises and static, which also can be accomplished by turning the knob completely to the right. This latter feature is exceptionally desirable for distance reception.

HINTS NECESSARY FOR BETTER RADIO RECEPTION

Use only standard high grade tubes. Cheap tubes will result in poor reception, poor tone and break downs at inopportune moments.

FUSE

Should there be a short in the wiring or a defective tube installed in the set, the fuse, which is located on the right hand side of the chassis assembly, will be blown. This can be replaced by an ordinary 3 amp. automobile type fuse. There are two positions to install the fuse, the two rear clips being used for 110 volts and the two front clips being used where excessive voltages rises as high as 130 volts.

In case of any unusual disturbances in the set, do not attempt to operate same until advised by an experienced service man.

If set does not light, inspect plug connections to wall, also fuse.

If set lights and does not play, inspect speaker terminal and see if it is plugged into the holes marked speaker at the rear of the chassis.

Also, have tubes tested for probable filament shorts.

In all cases, do not attempt to repair the set yourself. Call a competent service man, otherwise your guarantee will be nullified and void.

CAUTION: Before attempting to install or operate, ascertain if this receiver corresponds with the voltage and the cycles of your power supply. The voltage and cycle reading is marked plainly on the license plate. ("Check Same"). Information on the above figures can be ascertained by calling your local power company. In localities where extreme fluctuations of voltages occur, we recommend that a separate voltage compensator be used to maintain a steady power supply.

ANTENNA & GROUND

The quality and amount of reception depends on the correct use of both aerial and ground. In congested areas where several broadcasting stations are in operation, it is not necessary to have an outdoor aerial. Set can be operated on from 3 to 15 feet of aerial for all local reception. In outlying territories or where your relative to a broadcasting station permits, an aerial of from 25 to 150 feet may be used properly insulated and with correct lead-ins.

A very important feature in connecting a radio is to have a good ground as close to the receiving set as possible. A poor ground is a producer of noises, fading and generally poor reception. Both aerial and ground should be inspected every six months for loose connections or broken strands.

Aerial and ground connections are marked on the binding posts at the back of the chassis.

TUBES

The equipment for this radio consists of 3-224, 1-227, 1-280 and 1-245.

CAUTION: Do not insert or remove tubes from sockets while current is turned on.